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ABSTRACT

These hearings transcripts present testimony concerning the status of medical and scientific findings on prenatal and postnatal brain development and the implications of federal policies for childhood development. Testimony was offered by Senators Dan Coats (Indiana) and Christopher Dodd (Connecticut); psychology professor Edward Zigler of Yale University; medical and psychological researchers; and spokespersons for child and family advocacy groups. The senators focused on the importance of early brain development and its impact on later development and government programs that assist families in raising children such as Head Start and the Family Medical Leave Act. Medical and university representatives described results of positron emission tomography studies of biochemical brain activity, comparative analyses of brain activity in normal and deprived infants, the critical period in brain growth, auditorially-mediated learning and auditory perception in human newborns, the impact of prenatal substance abuse and postnatal abuse on brain development, and the importance of early experience. Professor Zigler maintained that American society does not support optimal early development and recommended expanding the Family and Medical Leave Act of 1993, addressing the problem of child care, and supporting expanded parent education programs. A clinical psychologist commented on the need to nurture developing attachment relationships and expressed concerns about day care quality. Child and family advocates recommended that the dependent child care tax credit be made universal and noted bills which could assist home-based businesses and telecommuting employees. Materials supporting the testimony are attached. (KB)

S. Hrg. 105-85

PRE TO 3: POLICY IMPLICATIONS OF CHILD BRAIN DEVELOPMENT

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HEARING

BEFORE THE

SUBCOMMITTEE ON CHILDREN AND FAMILIES

OF THE

COMMITTEE ON
LABOR AND HUMAN RESOURCES
UNITED STATES SENATE

ONE HUNDRED FIFTH CONGRESS

FIRST SESSION

ON

EXAMINING THE STATUS OF MEDICAL AND SCIENTIFIC FINDINGS INTO PRENATAL AND POSTNATAL BRAIN DEVELOPMENT AND IMPLICATIONS THAT FEDERAL POLICIES HAVE ON CHILDHOOD DEVELOPMENT

JUNE 5, 1997

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PRE TO 3: POLICY IMPLICATIONS OF CHILD BRAIN DEVELOPMENT

THURSDAY, JUNE 5, 1997

U.S. SENATE,
SUBCOMMITTEE ON CHILDREN AND FAMILIES, OF THE
COMMITTEE ON LABOR AND HUMAN RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:35 a.m., in room SD–430, Dirksen Senate Office Building, Senator Coats (chairman of the subcommittee) presiding.

Present: Senators Coats, Gregg, Hutchinson, Dodd, Wellstone, Murray and Reed.

OPENING STATEMENT OF SENATOR COATS

Senator COATS. The hearing will come to order.

The chair wants to particularly thank our witnesses this morning for their willingness to come and meet with us and talk to us about what I think is an extraordinarily important topic.

Since the dawn of time, human beings have been fascinated by the wonders of the world and the mysteries of the universe. From contemplating the stars in the sky to meditating on the depths of human intelligence and emotion, man has searched for answers to life's great questions.

This hearing is intended to review the status of medical and scientific understanding of prenatal and postnatal brain development and to explore some of the policy implications that arise.

As Newsweek magazine reported, "Cutting-edge science is confirming what wise parents have always known instinctively—young children needs lots of time and attention from the significant adults in their lives."

This hearing will examine not only new technology and what it may teach us about the brain and brain development, but how we might strengthen existing instincts and knowledge about how children learn, how they develop emotionally, how parent-child attachment, both prenatally and postnatally, impacts a child's development, and how new technologies and nonmedical interventions can help compensate for brain deficiencies or a lack of adequate early development.

Today we will learn how children respond to parental involvement in ways that benefit their families while building their communities. A recent study of more than 27,000 individuals in 600 neighborhoods found that children who spend at least four evenings a week at home with their families, and had frequent, in-depth conversations with their parents were more likely to succeed in school and were less likely to have premarital sex or use alcohol or drugs.

The primary role of parents is indisputable. Yet, a majority of Americans believes that the policies of Government and businesses are not supportive of families with very young children. A former colleague of ours, Representative Pat Schroeder, is fond of saying, "You can get a bigger tax break for breeding racehorses than you can for raising children."

We should heed the words of author James Collins who stated, "A change in attitude toward parenting and marriage would do children far more good than any Government program. A society that honors mothers and fathers who spend substantial time at home raising their children is a society that enjoys stable families and strong communities." This is no mystery of the universe—it's only common sense, just ask your children.

Our hearing today will consist of two panels. The first will examine the status of medical and scientific understanding of human brain development, from pre-birth through 3 years of age. Our second panel will then discuss the public policy implications of this latest scientific knowledge.

To our first panel, I now welcome Dr. Harry Chugani. Dr. Chugani is a professor of pediatrics, neurology and radiology at Wayne State University School of Medicine, and he serves as director of the Positron Emission Tomography Center at Children's Hospital of Michigan. Dr. Chugani has pioneered the use of PET in children.

I also welcome Dr. Benjamin Carson. Dr. Carson is the director of pediatric neurosurgery at the Johns Hopkins Medical Institutions, and an associate professor of neurosurgery, oncology, plastic surgery and pediatrics at the Hopkins School of Medicine. Dr. Carson is a world renowned surgeon, credited with leading the team that successfully separated 7-month-old German twin boys. His autobiography, "Gifted Hands," chronicles the road from a broken home and a life of dire poverty to the successful life he enjoys today.

Before we turn to our witnesses, and we certainly thank them for their willingness to testify, I would like to ask our ranking member, Senator Dodd, if he has any opening comments.

OPENING STATEMENT OF SENATOR DODD

Senator DODD. Thank you very much, Mr. Chairman. Let me thank you immensely for holding this hearing and thank our witnesses for coming.

This is such exciting news that we have been receiving, which many people, I think, without having the benefit of scientific data, understood and appreciated a long time ago. What has come to light now, is scientific information which confirms what many people have felt for years and years—that these earliest stages of a child's development are so critically important, and they can really have a profound impact.

I am delighted to see both of our witnesses here this morning, and am looking forward to the second panel. Ed Zigler, Mr. Chairman, as you know, has been before this committee almost as many times as you and I have sat here. Ed Zigler is the father of Head Start, and in the last week or so, I have been with him on more occasions than his family probably has been—once by teleconferencing at the National Head Start Association gathering in Boston, and most recently on Monday morning—and this is a very clever ploy I am about to use, Mr. Chairman—I was with Ed Zigler as he received from Working Woman magazine one of the 20 or 25 "Men of the Year" in terms of his work on Head Start. I say that because I was there also as one of the recipients of "Men of the Year." How was that for a subtle way of getting that plug in?

Senator **COATS**. The chair wants the record to reflect its hardiest congratulations to both Dr. Zigler and Senator Dodd.

Senator **DODD**. Thank you very much, Mr. Chairman. I was able to get that in pretty well.

I am anxious to hear what Ed's thoughts are this morning as well, and, like so many, I have found the recent research on brain development in the youngest of our children riveting. Mr. Chairman, holding this hearing is going to be extremely worthwhile because there are so many ideas people are talking about from a public policy standpoint that having the benefit of listening to some real experts talk about this can help guide us in those policy decisions.

As I said, we all knew that in the earliest years of a baby's life, there were critical times for bonding with parents and stimulating activities. But I do not think any of us ever understood how or why those years were so important. I have been using an analogy over the last number of weeks in schools and elsewhere in talking about this issue. One thousand trillion synapses occur in the first 36 months of life. The best analogy I have seen is the number of stars in the Milky Way, and most people know what the Milky Way is. On a clear night, I have asked adults and children to go out and look up at the Milky Way. And that is how many of those synapses occur in 36 months, and if you use them, they have a great ability to benefit a life, and if you do not, you lose them.

I often cite the example of my own sister, who was born with cataracts in the 1930's, and is blind. She is a teacher and taught for almost 30 years now, as an early childhood development specialist. And through the remarkable support of my parents over the years in the early days, when there was little to assist a blind child. The presence of cataracts, of course, interrupted the formation of the synapses of sight. Today, people look aghast at me when I say with my sister was born with cataracts and is blind, because today it is routine procedure to remove the cataracts and restore sight. But because the cataracts interrupted that synapse, she never developed sight and as a result has grown up blind. That is what we are talking about here.

So it is very, very exciting, this new information, and the good news is, of course, that we have had a lot of important things happen. Four years ago with the help of my colleague, Dan Coats, we were able to pass the Family and Medical Leave Act, and it has been throwing families a lifeline as we know, as they struggle to balance the arrival of new children with their jobs. Millions of mothers and father have been able to take time off to be with their new babies, take care of them, sing to them, talk to them, and do the things now that we realize are so critically important. And fathers and mothers are doing it, and while it is not a great deal of time, and most cannot even take the full amount of time, the fact that there is some amount of that time is tremendously helpful, and we realize now the benefit that occurs for the rest of that person's life as a result of what happens in these first weeks is significant.

Obviously, the needs of children and their families clearly do not stop after the first few months. Parents go back to work, and again, in many cases here, we are talking about parents who do not have any choice—they are either single parents raising kids, or two incomes are necessary, and so it is a struggle. And for those who do return to work, they have got to rely on places to care for their children that are hopefully going to understand the importance of early development to a child's welfare.

Once again, we already have successful programs in this area. For 30 years, of course, Head Start, which Ed Zigler will be able to talk about, has provided millions of low-income and at-risk children with safe, enriched, supportive, loving and caring environments. In addition, Head Start has helped millions of parents be better parents through education and comprehensive supportive services.

Head Start has proven a success. Study after study has shown that Head Start kids start school ready to learn; Head Start kids are more likely to stay out of special education, stay on grade, and graduate. We know that every one dollar invested in Head Start has saved, in estimated costs, $7, with special education welfare and truancy problems alone.

So the challenge is to invest enough to reach and teach all eligible children from zero to 5. It is clear that we are not doing enough today. Just 40 percent of the eligible children are being served. The recent budget agreement is a good start. It commits to serving one million children by the year 2002—an additional 200,000 over where we are today.

I also agree with Pat Schroeder that it is costly, but it is awfully costly not to do it, when 60 percent of our kids are going underserved in this area. It is moving a few tax dollars around one place or another. This is not heavy lifting, over 4 or 5 years, to come up with the resources.

And again, if there was a great debate about whether it worked or not, I would say, well, I understand that. But everyone agrees it works now. The question is whether or not we can come up with $3 billion or $4 billion a year—that is what it amounts to—over the next 4 or 5 years, to fully fund Healthy Start, Head Start, and quality child care for people. And I am still hopeful that we can. We are moving in the right direction.

At any rate, Head Start has been important, and these other programs as well are moving us along but the testimony we will hear today, I think, can help us make the case that we are no longer debating threshold questions.

I understand, Mr. Chairman, that Dr. Carson has a minor problem of some surgery a little later on, so let me submit the rest of my remarks here for the benefit of those who may want to read them, and get to our witnesses.

[The prepared statement of Senator Dodd follows:]

PREPARED STATEMENT OF SENATOR DODD

Mr. Chairman, I am pleased to open with you this morning this hearing on Early Childhood Brain Development.

Like many in the Nation, I have found the recent research on brain development in the youngest children riveting. We have seen special editions of major news magazines—Newsweek and Time—and national morning news shows have dedicated whole weeks to the subject.

We all knew that the earliest years of a baby's life were critical times for bonding with parents and for healthy, stimulating activities. But we never fully understood how or why these yearn were so important for future growth and learning.

Thanks to today's technology, we can now look inside the brains of infants and toddlers to watch them work—and the pictures are astounding. In the first months of a child's life, one thousand *trillion* synapses, or connections, between brain cells, are formed. This is more than all the stars in the Milky Way.

This potential is not without limits, however. Scientists have found that with these brain cells there is a "use it or lose it" phenomenon—the connections in a child's brain only survive if they are reinforced. They are either solidified or they are lost.

To illustrate this point, studies have found that children who develop cataracts at an early age lose their ability to see, even after those cataracts are removed, because the brain pathways for vision were not allowed to develop during the critical period for achieving sight. I know about this because my oldest sister, Carolyn, a teacher in Connecticut was born with cataracts many years ago. She is blind today. Had we known what we know today, my parents might have been able to do something differently.

The challenge now is to convert this knowledge into action. We know what young children need, we must now set about making sure they get it. Their futures and ours depend on it.

The good news, in my view, is that this is one of the few problems where we do not have to search for answers—we have them right here in front of us.

For 4 years, the Family and Medical Leave Act has been throwing new families a lifeline as they struggle to balance the arrival of a new child with their jobs. Millions of mothers and fathers have been able to take time off to be with their new babies—to take care of them, to sing to them, to talk to them, to play with them—time to form the critical bonds between parent and child. I believe we must expand the FMLA to include an additional 13 million working Americans.

But the needs of children and their families clearly do not stop after the first few months of their lives. Parents go back to work, some by choice and some out of necessity. But whatever the reason, the reality of today's America is that we need quality child care.

Once again, we already have successful programs in this area. For 30 years, Head Start has provided millions of low income and at risk children with safe, enriched, supportive and loving care. In addition, Head Start has helped millions of parents be better parents through education and comprehensive supportive services.

And Head Start is a proven success. Study after study has shown that:

- Head Start kids start school ready to learn.
- Head Start kids are more likely to stay out of special education, stay on grade, and graduate.
- And we know that for every one dollar invested in Head Start, seven are saved in costs associated with special education and truancy.

The challenge is to invest enough to reach all eligible children from 0 to 5. It is clear we are not doing enough today—with just 40 percent of eligible children served. The recent budget agreement is a good start. It commits to serving one million children by 2002—an additional 200,000 over where we are today.

I would assert that this is not enough—not with our new found knowledge of the importance of these early years and not with the growing need. We can do better—and we must. I believe we must serve all eligible children in need of Head Start.

In particular, we must continue the expansion of Early Head Start—not by diverting funds from older Head Start children, but by directing new resources to the youngest ones. Thirty years ago, we thought that starting the educational process at age 3 or 4 was a breakthrough. Now we know that we must reach children even earlier. Learning can, and should, start in the earliest weeks and months of life.

As you know Mr. Chairman, I offered an amendment to the Budget Agreement a few weeks ago that would have put us on the path toward full-funding Head Start. It was unfortunately rejected. However, I will continue this effort.

I plan to introduce comprehensive legislation soon that would fully-fund Head Start, expand Family and Medical Leave, fund the Child Care Development Block grant, and increase funding for the successful Healthy Start program.

These proposals are not radical—they are within our reach right now. And, we won't just be changing our statute books—we'll be changing for the better the lives of millions of American children.

Mr. Chairman, once again I appreciate your calling this hearing this morning. This is, I believe, one of the most exciting areas of research and public policy and I look forward to this morning's testimony.

Senator **Coats**. A minor time problem; major surgery.

With that in mind, Dr. Carson, we would like to have you go first so that you can leave when you need to. We obviously do not want to change that schedule, and I know you adjusted it to be here to speak this morning. We look forward to your testimony and thank you for coming.

STATEMENTS OF DR. BENJAMIN CARSON, DIRECTOR OF PEDIATRIC NEUROSURGERY, JOHNS HOPKINS HOSPITAL, BALTIMORE, MD; DR. HARRY CHUGANI, DIRECTOR, POSITRON EMISSION TOMOGRAPHY CENTER, CHILDREN'S HOSPITAL OF MICHIGAN, WAYNE STATE UNIVERSITY, DETROIT, MI; AND ANTHONY DECASPER, HEAD, DEPARTMENT OF PSYCHOLOGY, UNIVERSITY OF NORTH CAROLINA AT GREENSBORO, GREENSBORO, NC.

Dr. Carson. Thank you, Senators Coats and Dodd. It is a real pleasure to be here with the other distinguished panelists and guests to talk about something that is, obviously, extremely important to me as a pediatric neurosurgeon spending tremendous amount of time dealing with the human brain.

One of the things of interest is that the human brain begins to develop very rapidly, within the first few weeks of conception, and continues that very rapid development throughout the first few years of life. In fact, after a baby is born right up until about age 30 months, the proliferation of the synapses, the dendritic process, is continuing rapidly, and the myelinization process continues right up until about age 10 years.

I could spend, easily, the 10 or 15 minutes talking about such things as that, but I do not think that would be very interesting to people, to be honest with you. So let us talk about something a little more practical—about human potential, the human brain, some of the relationships that are involved.

Why does a baby who is born sleep for 22 hours a day, waking up occasionally to eat and do other things? By the time they are 2-1/2 years old, they are walking around, talking, hopefully obeying commands. This is a tremendous change—the most rapid change that occurs during a person's entire life span.

Let me give you just a story that demonstrates human potential. A few years ago, there was a young girl—she was in Connecticut, just by coincidence—who was swinging in a school yard, fell off of the swing, hit her head and had a seizure. Nobody got too excited. They said it is just a posttraumatic seizure, no big deal. The problem was, she had another seizure the next week, and pretty soon, two a day, three a day. The doctors could not stop them. Then, 10 a day, 30 a day, 60 a day. Doctors in Connecticut became frustrated, sent her to the doctors in New York, who did not know what to do. They sent her to the doctors in Boston, and they did not have a solution. But there was an old doctor there who said this reminds me of a patient I once saw who had Rasmussen's encephalitis. He said, with this process, the brain will continue to deteriorate, the seizures will get worse; there is nothing anybody can do about it, and eventually, she will be in an institution, and eventually, she will die.

Well, of course, they were devastated. But the mother was one of those people who would never say die, so they came back home, and she went to the library, read everything she could about seizures, encephalitis, discovered some of the work we were doing with cerebral hemispherectomy, an operation where we remove half the brain to stop intractable seizures in children at Johns Hopkins.

They brought the girl down for an evaluation. We evaluated her, and I and my colleagues felt that she was a candidate for this operation. When I explained to the parents the risk of the surgery—that she might not be able to speak, she might be paralyzed, she might be in a coma, or she might die—they decided they would rather take their little girl, seizures and all, back to Connecticut, and they did. And she was in a play that Christmas, and fell down on the stage, had a grand malseizure—arms and legs jerking, eyes rolled back, foaming at the mouth, incontinent of urine—and that was the straw that broke the camel's back.

They brought her back, and they wanted the operation. I performed it—a left cerebral hemispherectomy—and everything went smoothly except for one thing—she did not wake up. She stayed in a coma. A day, 2 days, 3 days went by, still in a coma. The parents were absolutely devastated, and I felt horrible every time I went in that room. And, a week, 2 weeks went by. She used to love "Mister Rogers," so they would play tapes of Mister Rogers, singing and saying poetry. It never woke her up.

Three weeks went by, still in a coma—off the respirator, but still in a coma. Mister Rogers came to the hospital, with all of his puppets, to her bedside. It did not wake her up.

Four weeks went by, still in a coma. Then, at 2 a.m. in the morning, Dad was lying on a cot next to her bed, and she said, "Daddy, my nose itches." And he was so shocked, and so happy, he jumped up, ran out in the hallway, shouting, "She talked. She talked." He was only wearing his underpants, but anyway, everybody came out to see what all the commotion was, came down to the room, and there she was, scratching her nose.

And that was the beginning of a rapid recovery for that little girl. In no time, she was walking, she was talking. It was time for her to go back to school. And now they begin to worry. They said she is missing the left half of her brain—the side that allows you to calculate and do all of these sophisticated things. How will she ever do in school? How will she do in math?

But the little girl was so determined. She worked so hard that the next year, she had the highest math score in her class. That goes to show you what determination can do.

But the other interesting thing about that is the whole concept of plasticity. People are always wondering, how can this little girl who is missing half of her brain, walk and talk and achieve? But the human brain, particularly in the developing stage, has this process called plasticity, which allows it to do things that a mature brain cannot do. I would liken it to saying that all the neurons have not decided what they want to do when they grow up yet, and they can be recruited to do other things. This is the fabulous thing about the young developing brain.

But, in my own case, I was a kid who was at risk as well. I was from a single-parent home, and in fact, I was a terrible student. I remember once having an argument in school about who was the dumbest person in the class, and there was general agreement that it was me. But then they started to extend the argument to who was the dumbest person in the world, and I was not willing to accept that rap. It certainly would have been apparent to people if they had looked at me, and no one would have concluded that this kid with horrible grades and a terrible temper and low self-esteem who lived in the worst neighborhoods was going to grow up to become a pediatric neurosurgeon.

But my mother, during this time—and you might have seen the article about her in "Parade" magazine on Mother's Day—she only had a third grade education, but she never really saw herself as a victim. She worked very hard—two, three jobs at a time. The problem was that she never saw us as victims either, so she would never accept an excuse, and that was a problem for me and my brother—at least we thought it was. But the fact of the matter is, over the course of time, when someone will not accept an excuse, you stop giving them. And that, coupled with the fact that she made us read books, made a tremendous difference. But she was not there. She was not there. She was out working two and three jobs at a time as a domestic, but when she was there, the quality of time was tremendous, and we knew that she had our best interests in mind. Sometimes we would not see her for a day or two because of her work schedule, but she instilled within us a sense of responsibility, and she made sure that we knew how much she loved us.

It brings me to one of my closing remarks, and that is that there are a lot of potential programs that help people, but I think that the most important thing for the young, developing individual is the sense of caring, the sense of love, the sense of nurturing, knowing that there is someone there for them. I realize that in the society in which we live right now, because of financial constraints and so forth, it is not possible, necessarily, for everybody to stay at home and be with their children. But in traveling around this country and doing a lot of speaking, one of the things that I have noticed, particularly in the industrial area, professional area, where they have day care centers associated with the workplace, where the mothers can go over and see the children at lunch time, where they can go over and see them at breaks, that production is tremendous. I do not have all the statistics.

I hope that will come out during the day today, but the productivity of those mothers is much enhanced, but more importantly, those children have an opportunity, on a more regular basis, to interact with that mother or with the father—I do not want to be biased here—and I think that that makes a tremendous difference.

The other thing that I think is incredibly important is the research. We have learned enormous things about the developing brain. We have been able to stymie the victory of a lot of the congenital diseases of the central nervous system—the brain and the spinal cord—because of this research, which has greatly enhanced our ability to intervene. This is continuing now. Neurosurgery—the field that I am in—has changed enormously just in the amount of time that I have been there because of individuals who are willing to devote the time to this.

The reason that I bring that up before you all as policymakers is one of the things that is going on—not only at Johns Hopkins, not only at Yale, at Wayne State, at every institution—is that we are fighting for our lives in terms of managed care, in terms of people who are putting excessive demands on us, the paperwork, and so on. It is really stymieing the research tremendously, and I think we are all going to suffer from that in the long run. This is not to say that managed care is not a good idea. It is a good idea—it has saved an enormous amount of money, but nobody's premiums have gone down, and none of it has gone back into medical care. And this is where we have to find a way to redirect those things so that research becomes a viable thing. The fact of the matter is if we continue at this pace, we are going to kill research; we are going to kill academic medicine as we know it. And if we are going to do that, I think we have to do that as a conscious choice, and say this is what we are going to do, rather than come back 10 years from now and say we did not mean to do that.

I believe that the good Lord has placed the legislators in their position for a reason, and I just appeal to you as someone who is extraordinarily interested in human potential, the human brain, young people and research, and who believes that this is the greatest Nation on Earth, to use those God-given responsibilities to do the right thing.

I thank you very much.

Senator COATS. I thank you, Dr. Carson.

Given your schedule, let me at this particular point, with—Dr. Chugani, normally what we do is we have each member from the panel speak, and then we ask questions. I am concerned about your schedule, getting back, so if I could with your permission take questions at this point for Dr. Carson, and then we will allow you to get on the road and get back to Johns Hopkins.

Dr. CHUGANI. That is fine.

Senator COATS. Senator Dodd, why don't you go forward, and Senator Murray, and then I will rap up.

Senator DODD. Thank you.

First of all, let me underscore your last point. I could not agree more with you more. In fact we had some hearings, I think it was here in this committee, a few weeks ago, on managed care and some discussions about it, and I in fact made the same remark you did. I think it has done a lot of good things in terms of efficiencies and so forth, but I am getting very uneasy about the peripheral effects of this.

The research was not one of the things we discussed. There are other matters that have been affected by managed care. And again, it has been very successful in Connecticut, in fact; managed care is working well. So I am not denouncing it, I am just concerned that the pendulum is swinging rapidly in one direction, and we are not taking notice that there are some effects of that swing, and you have pointed out another one here this morning that I know Senator Kennedy and others have talked about.

I think those of us who come from States where there are strong teaching hospitals maybe get a bit more of this than others, because we hear it firsthand from those people out there.

I should have made note of the fact, of course, that in addition to having a patient from Connecticut, you also got some of your good educational learning in Connecticut along the way, and we are very proud of that.

Dr. CARSON. That is right.

Senator DODD. The great research that is going on—I guess the most difficult problem that we have—we can, as you say, pass laws, and I am a strong advocate and I think I heard you say by implication that obviously, the best environment is to have caring parents. There is just nothing better. Nothing replaces that. There is nothing that is going to equal that kind of affection, attention and caring. So I guess we all ought to begin by stating that as categorically as we can, and wherever possible, parents ought to be spending as much time with their children as they possibly can.

Your mother is unfortunately an example that is being repeated every hour of every day all across the country. So in the absence of that, where there is not a choice, how do you come close to at least trying to duplicate an environment where there is caring and nurturing and the kind of activity that a caring parent would give?

Dr. **CARSONMCNEIL**. I think that is an excellent question.

The whole concept of volunteerism, I think, becomes very important there. I would give an example of the executive vice president of the Johns Hopkins Medical Institutions. She is a black female who grew up as an orphan. She was transferred from orphanage to orphanage, foster home to foster home, and was severely abused. Finally, she ran away and ended up living as a young teenager by herself, in a basement in Cincinnati, working as an accountant for a bookie. But some of the teachers at the school took her under their wing. They knew that she did not have parents; they knew that she was not legal. They never turned her in—and I am not advocating anything illegal here—but the point being, they nurtured her, and they were not her family. They saw her through—she went on to college, to graduate school, and now she basically runs the hospital.

There are stories like that around our Nation of incredible things, and it comes from other people mentoring, recognizing their responsibility to other individuals. We can all do it, and I think we have to foster that spirit of volunteerism, keeping in mind that every young person that we prevent from going down that path is one whom we do not have to protect ourselves against later on, is one whom we do not have to pay for in a penal system; is one whom we do not have to pay for in a welfare system.

So that even if your intentions are the most selfish, it still behooves each of us to fill a responsibility. And it does not require that much—I talk about this in various groups around the country—for a particular family or an individual to see someone who is in trouble and to reach out to them and invite them to become sort of a surrogate son or a surrogate daughter. We all have a stake in that, and I think that is what we need to encourage more, as opposed to very big, expensive programs, notwithstanding Head Start, which has shown itself to be extraordinarily useful and should be a good model.

Senator **DODD**. Thank you.

Thank you, Mr. Chairman.

Senator **COATS**. Senator Murray.

Senator **MURRAY**. Mr. Chairman, thank you for having this hearing. As we all know, it is an extremely critical one, and I am really pleased that, as a country, we are really beginning to focus on the importance of what happens to our children from birth to 3.

As a former preschool teacher, I have seen it firsthand, and it is nice to know that the research is backing up what I knew as a teacher, and it is nice to see the country recognizing that we need to invest in this.

I am interested a little bit in about what you said about your own upbringing, with your mother having a third grade education. We all know that what parents do between a child's birth and 3 is absolutely critical. Somehow, even though your mother only had a third grade education, she knew how to raise children. Where do you think she learned how to do that?

Dr. CARSON. Yes. Well, she prayed and asked God to give her wisdom. And that is how she came up with the idea of making us turn off the television set and requiring us to read two books apiece from the Detroit Public Library and submit to her written book reports, which she could not read, but we had no idea that she could not read; so we were turning in these reports, and she would act like she was reading them and putting a little check mark on them.

In the process of that, of course, we were looking at words all the time, so we learned to spell, we learned grammar and syntax. And that is a very important part of developing self-esteem, because before that time, I thought I was stupid, and once I got to the point where I knew how to read well, and I could derive information from the written page, all of a sudden, when the teacher would bring up a new subject, I knew the answers, and other people did not. What a tremendous impact that has.

One of the things that I have noticed about young people and the developing brain is that if you can take a young person, and you can make them feel smart, then they can do just about anything. You have to recognize that the human brain—and I do not even want to get into the number of billions of neurons and interconnections there are—but the human brain has the ability to retain every piece of information that you have ever seen or ever heard. I can take an 80-year-old man right now, open his cranium, put in depth electrodes, stimulate, and he can tell me verbatim what was on a page that he read 50 years ago. He can tell me what everybody was wearing in a room. All of that material is retained. I could go through a bunch of neural pathways that require a split-second, and yet our brains can process and do those kinds of things in series, multiple complex tasks at one time, much more complex than a computer.

So one of the things that we do is that we tend to sometimes listen to people who say that not everybody is very smart. But the fact of the matter is, the average human being with an average brain can do just about anything of an intellectual nature. That is one of the things that we have to begin to emphasize, and that is why I spend a lot of time talking about sports, entertainment and how we need to shift the emphasis away from those things and back toward the intellectual things which got America to the place where it is today, and got us there more rapidly than any other Nation ever got there—but which can also go in the other direction if we continue to follow a path where we do not emphasize intellectualism and achievement.

Senator MURRAY. So everyone has tremendous potential, and we need to learn how to tap it. How do we get this information out to parents? What is the best way to make sure that everybody's potential is tapped? I think that is one of the challenges that we face.

Dr. CARSON. Well, we use the media, if we can convince them. They seem to like sports and entertainment a lot, but if we can find a way to get them to do it.

I do not know if I should say it or not, but I was talking to the CEO of Kellogg's yesterday, and they are going to start putting on the back of their Rice Krispies boxes intellectuals and people of great achievement and how they got where they were, so that young people can read about that while they are eating their cereal. We just need to gradually infiltrate that whole process that, from morning to night, says go out and bounce this basketball, and you can be like Michael Jordan, to learn your physics and learn your calculus, and maybe you can become a great inventor like Thomas Edison or Elijah McCoy.

Senator MURRAY. Thank you.

Thank you, Mr. Chairman.

Senator COATS. Dr. Carson, what time do you need to leave to make your surgery—probably pretty quick?

Dr. CARSON. If I could get a special Senate pass to speed, I could—I probably should leave right now.

Senator COATS. Yes, I think you should, and with apologies to my colleagues who I know would love to address questions to you, we will let you do that.

Dr. CARSON. Well, thank you.

Senator COATS. I just want to say one thing here. I was set to really enjoy the remainder of the series between the Bulls and the Jazz, and now I am not going to be able to watch that without feeling guilty and feeling like I should be on the Discovery Channel or something like that, so you have taken away—I am going to be on a guilt trip the whole rest of the series. I may not even watch it.

Dr. CARSON. Just read during the commercials.

Senator COATS. Dr. Carson, thank you very much. We appreciate your attendance.

Dr. Chugani, we look forward to your testimony. Thank you for your forbearance with Dr. Carson, given his schedule, and we applaud you for the tremendous breakthrough work that you have been doing on this subject, and we look forward to hearing from you.

Dr. CHUGANI. Well, thank you very much. Thank you for having me here, and to take you through the next 10 minutes some of the technology that I think has really been very important in allowing us to understand how the brain works. If I may show a few slides—and it does not work.

Senator COATS. Hit it again; maybe it is not quite in the—I am tempted to ask, is there a doctor in the house, but is there a slide expert in the house?

Dr. CHUGANI. So much for technology.

Senator COATS. That is like me with my VCR. Isn't it amazing what we can do—Dr. Carson is off to perform intricate neurosurgery on the brain, and none of us knows how to work a slide projector, including myself. Of course, our business is a bit more generalized than neurosurgery—I do not mean to equate the two.

Dr. CHUGANI. OK. This is my first slide, and this slide is just to show you that a very important principle of brain development is the process of elimination. Elimination is vital in the development of the brain. The brain tends to make too much of a thing and then gets rid of it. This is a slide of a section through the brain of a fetus, and you can see these many, many brain cells that are deep within the brain. They will migrate to the surface of the brain to what we call the cerebral cortex. There are many more cells that are produced than will eventually make it to the cerebral cortex. There is the process of elimination, of the redundancy of cells. Now, this is prenatally, and there are many factors during the time of pregnancy that can have a negative influence, that can upset the equilibrium, the process of this cellular migration to form the cerebral cortex.

Following birth—postnatally—one sees a similar process occurring, and that is we are all born with a certain number of brain cells that you see over here, but these cells are poorly connected to each other—perhaps "poorly connected" is not a good phrase to use in Washington—but these are cells that have a certain number that we are born with, but they do not connect well to each other, and then what happens is this explosion of connectivity in the brain.

Why does this occur? The body does not have enough genes to dictate precisely to the brain that it should be wired in a precise way. It would not be an economic use of our genes. It would take too many genes to dictate precisely how the brain is wired.

So, what Mother Nature has chosen to do instead is to make too many connections among these cells, and what happens after that is environment and exposure, the kinds of experience that we have during the first 10 years or so, will dictate which of these connections will be kept and which of these connections will be eliminated. So there is this pruning process—elimination—once again, just like what happens before birth, but this time, elimination of the redundancy of connections. And it is not a random elimination, it is a very selective elimination—selective, in terms of one's early experiences.

You can learn to play a piano between 5 and 10 years of age and not play the piano for the next 20 years, but those connections are put in place and, at the age of 30, if you come back to play the piano, with a little bit of training, a little bit of coaching, you will make rapid progress that would be quite different from somebody who has not had that early exposure.

So what I am really emphasizing here is the powerful ability for us to really define and to dictate how our own brains will be wired up. We actually have the ability to do this, and this occurs within the first 10 years of age.

I have been using a technology called positron emission tomography to study biochemical processes in the brain. I began this work in 1981 when I was at UCLA in Los Angeles, and I remained there for 12 years, and 3 years ago, I moved to Detroit, where I am now the head of a PET center in a children's hospital.

But I have continued this work, and this is a brain—three horizontal slices of a brain—of a one-month-old. And you can see that there are only certain areas, the sensory cortex, the motor cortex and certain other primitive areas of the brain, that are dark on these images; they are active. We are measuring activity in the brains of these babies by using this kind of technology.

And during the next 3 months, we see a more complex picture. Other areas of the brain have become dark—the visual cortex, the parietal cortex and so on—and with this comes a change in behavior of the baby. This is a constant interplay between the baby and this environment. From day one, there is this kind of interaction that leads to developmental changes, and at 8 months, one sees even a more complex picture, as opposed to the one that I showed you in a one-month-old.

This is a slide—and I do not know how clear it is. We have had the opportunity to study a number of Rumanian orphans who were adopted and brought to the West. These were orphans in Rumanian orphanages who really did not get a lot of emotional interaction. They really were not cared for very well, except for basic functions like feeding and bathing.

This is a cross-section of the brain of a normal individual, and you can see that these areas that we call the temporal lobes—highly important in emotion and association functions in the brain—are quite active. They are dark over here, they are using a lot of energy, they are showing a lot of activity. And you can see that in this Rumanian orphan, this area is not working, and in that one, it is not working.

Now, these children walked and talked and did everything normally, but they have serious abnormalities on their neuropsychological profiles. You can examine them with a neuropsychological battery and you will discover that they have many problems. One of the problems that they have is what we call an attachment disorder.

So the lack of interaction in the critical first year or so has led to changes that we can see with the technology that we have today. With this technology, we can measure the amount of glucose being utilized in the brain to support activity. We are looking at activity with this kind of scanning, which is different from MRI scanning, which is looking at structure, anatomy; we are looking at activity, function. And we can measure individual regions in the brain using this technology, and what we find during brain development is really fascinating.

This is a scale, in years, children from zero until 20 years, and then these are the amounts of activity in the brain as measured by the amount of glucose consumed to make energy. We can see that at birth, the amount of energy requirement to the brain is somewhat lower than adult, but then there is this tremendous burst of activity from zero to 3 years, so that at 3, we are exceeding adult rates by over 200 percent. These high rates of glucose consumption in the brain to make energy are maintained until about 10 years of age, when it gradually comes down. This is a very protracted course, it is a very dynamic course, and much of my career has been spent on studying the biological significance of this curve, which I found in the mid-1980's.

To make a long story short, what we are really measuring is the number of synaptic contacts in the brain. The brain produces, as I mentioned, all those extra connections that you see in blue, and that is being measured by a friend of mine at the University of Chicago, Dr. Huttenlacher, and he has measured these, and here

I plot his data in blue against my data in red. What we are really doing is measuring, with this noninvasive technology, the number of synaptic contacts in the brain and the fact that the human brain goes through this tremendous burst of synaptic contacts, which is paralleled by the greater energy demand by all those extra contacts, and then the elimination process that occurs in adolescence.

This is very important in terms of what Dr. Carson talked about, the brain plasticity, where children less than 10 years of age are able to reorganize their brains following the kind of surgery that he talked about. I myself have studied a number of children like that. But there are many pieces of data, in terms of learning a second language, for instance. One learns to speak a second language without having the accent—the wrong accent, rather—if one learns the language prior to 10 years of age.

Recently, in Germany, there was a nice study where a group of investigators measured the activation of the motor cortex of the right and the left side of the brain in individuals who learned to play string instruments. They found that there was a greater representation of the left hand in string instrument players in the brain, but only if they learned that instrument prior to 12 years of age—not after that. They did not have that advantage.

So this is again proof that we can in fact change the connectivity of our brain just by selecting the right kinds of exposures, and we have talked a lot about the significance of this curve, which I think is extremely important.

I would just like to conclude by saying that during the first 10 years of life, this is a very critical time in shaping how our brains will eventually be connected. We in fact have some control over how our brain will be wired up eventually, and this is extremely important in terms of environmental exposure.

I want to make the point that for many children, half of this opportunity that Mother Nature has provided us zero to 10 is wasted. There are many children who do not really get much in terms of an enriched environment until 5 years of age—some 3, but very few from zero to 3. So we are really not making use of what Mother Nature has provided us as a unique opportunity, when our brains are able to learn relatively easily.

I want to make the point that this really affects all socioeconomic classes. To some degree, I think it is more apparent in the lower socioeconomic classes, but to some extent, all classes. And we must, I believe, as a society, ensure that all children are given the opportunity of an enriched environment in order to maximize their potential. There are generations of people who really have not had their potential realized. There are geniuses out there who would have been recognized as geniuses had they had the right kinds of exposures.

And we must begin on day one.

The lack of proper nurturing, as well as exposure to negative influences, such as violence—the brain does not know and does not distinguish between violent environmental influences versus positive influences and will hardwire the kinds of negative influences, such as violence, hostility or aggression—those will also be hardwired. And we as a society have a duty, I think, to allow our children to grow in the best possible way to maximize their potential.

Thank you very much.

Senator COATS. Dr. Chugani, thank you very much.

I wonder if I can again divert a little bit from our planned program here, and ask Dr. DeCasper to come and join you, because he has done recent work on prenatal brain development, and it seems to me that if we can put both of you at this panel and then reserve the second panel for more of a policy discussion, that might work out better.

So again, with my colleagues' forbearance, Dr. DeCasper, thank you. Dr. DeCasper is head of the department of psychology at the University of North Carolina at Greensboro, and has done considerable research in the auditorially-mediated learning and auditory perception in human newborns and, as I said, recently studied auditory perception in human fetuses. It seems to me that it compliments what Dr. Chugani has talked about in terms of early development. We will put that on the table and then turn to our colleagues for discussion.

Dr. DeCasper, thank you.

Mr. DECASPER. Thank you, Senator Coats, for inviting me, and Senator Hutchinson.

I have been studying newborn learning through the auditory modality for about 20 years, and recently, I have had the pleasure of working with fetuses.

I apologize for my prepared remarks. You have an unedited version, so you will have to read through the typos.

Senator COATS. Well, if you could give us a summary of that, it would be helpful to us.

Mr. DECASPER. I would be happy to do that.

The development of an individual human is a lifelong process, as we have heard, but it begins at conception, and it continues into old age.

The magnitude and the quality of change that occurs during the first 266 days of prenatal development—the 9 months we are all familiar with—will never be duplicated in all the development that follows after birth. Physically, the individual goes from being a fertilized egg that can rest on the head of a pin, to a baby weighing 7 to 9 pounds. Biologically, she goes from being a single, functioning cell to a complex organism with a functional anatomy and physiology.

Behaviorally and psychologically, the changes are equivalently large, and these are the phenomena I would like to focus on this morning. I will speak about early brain development as it is reflected in sensory and perceptual functioning during prenatal life and about how those functional abilities can affect early postnatal social, emotional and cognitive interactions, especially with the family and the mother.

There is a time before birth when we are neither awake nor asleep, but then, at around 30 weeks of gestational age, our behavior becomes more organized, synchronized, and our nervous system has developed enough so that we begin cycling through periods of sleep and wakefulness. These sleep/wake cycles will continue to develop over the life span.

When we are awake, the world around us is readily available to our brain through the senses of sight, hearing, touch, taste and smell. These are the avenues of our experience with the world, and they become functional before birth. We know more about prenatal hearing than we do about most functional characteristics of the other modalities—at least, I do, and so that is what I would like to focus on as an example.

We can first observe a fetus' startle reaction to sound when she is about 23 or 24 weeks of age. Startle reactions to sound can occur because the auditory system is functioning, the motor system is functioning, and the two systems are connected to each other in an organized system. So we can say the fetus has auditory experiences, she can hear and react to sound as early as 24 weeks of age.

Perhaps the most experiences occurring are those that occur with maternal speech sounds. Maternal speech sounds enter the womb every time a pregnant woman speaks. A mother's speech in the womb is about as loud as it would be to someone standing next to her.

Other sounds can enter the uterus, too, from outside the mother, but they must be relatively loud to do so. Any fetus in this room will probably not hear our conversation.

The mother's speech sounds are available to the fetus each time she speaks in a normal manner. Thus, fetuses are exposed to both the unique characteristics of their mother's voice, and to the unique characteristics to the sounds of her language. Maternal voice sounds and language sounds reach the fetus where they are picked up by the ear, transmitted to the brain and registered.

There is good scientific evidence that these prenatal auditory experiences affect what the infants attend to and learn about after birth. For example, my lab has shown that, because of their prenatal experience with maternal voice sounds, newborns are more responsive to their mothers' voices than to other voices. The newborn's perceptual preference for the mother's voice puts her in a more ready position to affect her baby's behavior with speech. And, in fact, when I do my research with newborns, if I cannot quiet a baby, I invite the mothers to come and watch. And when I cannot quiet a baby enough to test the baby, I just simply ask the mom to come over and quiet the baby, and with a few words and a few strokes, the baby readily quiets—much more readily than I can quiet the baby, and I have quieted hundreds of babies, but she is much more effective than I.

Newborns had also been experiencing the sounds of the language their mother spoke when she was pregnant, and that experience, too, increases their interest in her whenever she speaks. It seems that our mother tongue is really our mother's tongue.

Under the usual conditions of life, the pregnant human uterus preferentially admits mother's speech sounds during the entire period of time of her infant's prenatal development. Those sounds impact the developing nervous system in ways that can reveal themselves in an infant's normal behavior.

A generalization about postnatal perceptual development is that the organism's sensory and perceptual interactions with the environment help determine the biological and functional properties of that perceptual system. We have heard that sentence this morning several times already, and in much more elegant terms—what it says is that our experiences help determine our perceptual capabilities.

I believe that that generalization, however, also holds, and perhaps especially so, for prenatal development, when the initial biological and functional properties are beginning to emerge. Thus, the life lived by a pregnant woman can affect the early emotional, perceptual and cognitive functioning of her infant. Her mode of living can affect the stimuli that enter her womb, for example, sounds—those she utters and those she is exposed to; chemosensory stimuli that arise from what she eats; and the vestibular and tactual stimuli arising just from her own normal movements.

We know that some environmental agents that pregnant women ingest, such as alcohol and illicit drugs, can harm the developing nervous system. It is also true that the absence of other substances, such as appropriate foods, can also harm a developing nervous system.

Although I believe that the stimuli impinging on our developing senses during prenatal life are important for a normal development—the development of perception, emotion and cognition—I do not believe that we know enough at the moment to advocate policies that would prescribe certain experiences that normal, healthy fetuses should have, published success stories notwithstanding.

However, we do know enough to advocate some proscriptive policies, and we have—for example, those policies restricting a pregnant woman's exposure to loud sounds, especially during that time when the inner ear and the auditory system are forming.

And we can probably begin thinking seriously about nonmedical prenatal interventions in cases where there is evidence—for example, genetic markers—that atypical cognitive development will occur if no intervening steps are attempted.

Thank you.

Senator COATS. Thank you, Dr. DeCasper.

Let me start by just asking a few questions. First of all, Dr. Chugani, I wish I had come across this information when I was in college, about the ability to learn foreign languages between the ages, and how that declines. If I had had that slide to show my foreign language professor in college, I could have saved both of us—he and me—a lot of grief.

Dr. DeCasper made the statement that the greatest period of development occurs between conception and birth—in that 9-month prenatal period. But your slide showed that the connections were, I think you described it as pretty loose, in that period, and that the real frantic activity occurred between zero and 6, and then the process of elimination started and then sorting it out. Am I missing something here?

Dr. CHUGANI. No, not at all.

I think the greatest period of development is from conception to birth—there is no question about that. But we have some control over that, and our duty there is to prevent drugs and negative influences, but we really do not have much control in terms of learning processes. The brain cells, as I mentioned, are produced in overabundance, and eliminated, and most of that occurs prior to birth. But the remaining cells that one is born with will go through a second stage of redundancy. This is now the redundancy of connections, synapses. Those are vast overproduced, and then it is driven by one's experience.

As one is exposed to various kinds of influences or stimuli, there is electrical firing along certain pathways, and the more there is firing, the more tendency there is for that particular pathway to reach a higher level of stabilization. It will be stabilized—that is, it will be hardwired. And what you do not use is in fact what will be selectively pruned away, chiseled away, during adolescence. The brain has to decide, what am I going to keep, and what am I going to get rid of, because I cannot handle all these extra connections. It is too demanding for the brain to have that, and it selectively chisels away, prunes away, what we did not use, and those are gone forever.

With that comes the loss of a unique window of opportunity that we—I know hundreds of individuals who took a second language in high school, and that is much too late. One should not take a second language in high school—this should come between 5 and 10 years of age.

Senator COATS. That is something all of us have experienced, I think.

So it is accurate, then, to State that providing the right nurture and nutrients in the prenatal stage is absolutely critical to setting the stage for the explosion that occurs from zero to 6, that that is an absolute prerequisite. And that is why fetal alcohol syndrome, smoking, anything that tends to retard that development is so critical.

Dr. CHUGANI. Absolutely. But I also want to emphasize the Rumanian orphans experience that I showed you in a couple of my slides, and that is, these are children who had the nutrition, but who, during those first 2 years, were not held. They were not loved. They were not cuddled. They were not kissed. And they have lasting influences in their brain.

Senator COATS. Right. It is a continuum, really—a continuum, from the day of conception through those first critical years.

Comment, if you would, on Dr. DeCasper's statements, Dr. Chugani, relative to the emotional attachment and the bonding. I think the temptation is—and what concerns me is—to say, well, yes, we all agree and science shows that the role of the mother is the most critical but, quote, we all know that all the mothers cannot be there and so forth, and so we find the next best thing. But how much of a gap is there relative to, say, the emotional nurturance, the emotional bonding, between mother and child, versus some type of stimulus and bonding and nurturing and care that is apart from the mother and apart from the family? Can either or both of you comment on that?

Mr. DECASPER. Yes. I would like to also address this present question by just going back to your previous question.

I began my talk by saying that development is a lifelong process, and it is, and it begins at conception and continues through old age. The most change happens between conception and age 3. For purposes of drama, I just pointed out that we go from a single cell to a functioning baby in 266 days, and the magnitude of change is incredible.

But postnatal life—living with a child to adapt it to its environment—begins at birth. One of the points that I made and that Dr. Chugani also made, if you remember one of the slides he showed, was that one of the earlier parts of the cortex that is functioning is the sensory cortex. What I said in my talk, essentially, was that the auditory cortex is functioning quite early, the sensory cortex, and it registers particular sounds. It registers them, and afterwards, after birth, those sounds turn out to be connected to the baby's mother.

So in some sense, the mother provides the child with—by the way the system is designed, evolution has produced an auditory environment that selectively admits maternal speech. I do not believe that is an accident of nature. I believe it is a consequence of evolution. But we have an environment that selectively admits speech sounds. They come from a particular speaker. The speaker happens to be the woman who will deliver them, so this baby is sensitive to that person. This woman has been speaking the language of the culture that other people around that child will speak; the child is differentially sensitive to those sounds.

So there is a preparation for postnatal development that begins prenatally, at least in the auditory modality, and it is hard to say that any one of those time periods is more important than the other in the sense that development continues. And we should not forget Dr. Carson's commentary about plasticity. That is the nature of the young nervous system.

OK, I am at your point, and it is about the mother and the baby. By virtue of their association during the baby's gestation, the baby has, if you will, privileged knowledge of her, and she can get a little more behavior out of the baby than other people can. But human adoptions are common, and the earlier the adoption, the more preferred it is from the child and parent's point of view, typically, so it is not a necessary association. But, under normal, usual circumstance, that is the person who tends to take care of the baby the most, and the system is designed to facilitate that. It is not writ in stone, and rearing policies are adapted to the culture in which the child is born.

Senator COATS. Is it fair to say that a one-on-one relationship is preferable to a one-on-five, or is it better to have five—if you put a child in immediate day care, which some have to do and some choose to do, it may be a 10- to-one ratio, it may be a 5-to-one ratio, it may be a 15-to- one ratio.

Mr. DECASPER. Some of the later speakers may be more competent to address that issue, but I would be willing to venture my opinion about it all.

What I think is important is consistency in the rearing relationship; whether it is one-on-one, or one-on-two, or one-on-three, if it is a consistent, predictable environment, that is a nurturing one and is one that provides the development of confidence—that was also clear in Dr. Carson's talk—his mother was an exceptional person, and she provided nurturance and warmth, and she also demanded competence, and self-esteem is not independent of competence. Nurturance and warmth will not do it alone.

But I think consistency is important. So policies that produce the ability of mothers—or families—to provide consistent, nurturant, competent care are important policies.

Senator COATS. My time has expired, but Dr. Chugani, do you want to just respond?

Dr. CHUGANI. Yes, I just want to add quickly to the point that I agree that consistency is very important, and I wanted to bring up the concept of what we in neuroscience call critical periods.

Senator Dodd mentioned the cataracts in his sister. What we know about cataracts these days is that one can be born with very dense cataracts in the eyes, and if one does not remove these cataracts prior to about 2 years of age—even if you were to remove the cataracts after the age of 2—the brain no longer accepts visual input.

What has happened? That visual cortex in the brain has been reassigned. That has been studied. It has been reassigned in the case of congenital blindness to tactile stimulation. So that visual cortex area is no longer visual cortex—it still functions, it still works, but it is doing something else. And I think that the same can be said for emotion. That is somewhat speculative, because it is much more difficult to study emotion than vision, but I think that the concept of a critical period—we know this occurs in humans—the critical period for a second language which we just spoke about is about 10 years; for vision, it is 2 years, and for emotion, it is probably very, very short.

So I think consistency of emotional contact within the first one to one and a half to 2 years of life. We learned this, again, from the Rumanian experience, that they have this so-called attachment disorder. And I wonder, really, how many of the children in this country have this to a smaller degree. It is very difficult to study.

Senator COATS. Thank you.

Senator Dodd.

Senator DODD. Thank you again, Mr. Chairman. I apologize for being out of the room for a few minutes, but I just want to underscore your points. I think they are excellent ones.

I was curious if you might just comment as well—I think we all appreciate the importance of nurturing and the positive things that can occur. We are flooded all the time on television, the nightly news, with all the violence that goes on. I wonder to what extent negative impulses can have a negative impact. You mentioned obviously the physical, a cataract, and I cited the case of my sister as an example of whose vision was impaired permanently as a result of that blockage, that the synapse did not connect in those early days.

But to what extent can a child who is subjected to the kind of rough environments that we see today—can that also affect them?

Dr. CHUGANI. That is an extremely important point, and I am glad that you brought it up. I briefly alluded to it in my talk. The brain, as I mentioned, hardwires according to experience. It has the tremendous flexibility and choice to hardwire what one is exposed to. It does not really distinguish between the positive kinds of exposures and the negative kinds of exposures.

You could argue that at one point during the human species, it was probably a positive feature to be aggressive and hostile—it ensured your survival. It will hardwire what it is exposed to, and I think that a lot of the environment in some of the cities, and the television—I am really down on the degree of violence one sees on television—I think that kind of exposure really is being hardwired in the brain. And I think it explains the behaviors of some individuals who are easily provoked—and who are provoked perhaps to a small degree, but the resulting act is far out of proportion. It is automatic. And that is what hardwiring is—that one acts in a very rapid way without really thinking about the consequences of that. I am convinced that the kinds of exposures that one gets can contribute to that.

Senator DODD. Well, I agree with you, and I am glad to hear you say that. We are all fascinated. Senator Lieberman, my colleague from Connecticut, and I hosted an event a couple of years ago for "Barney," here in Washington. I have had audiences before where there have been large crowds, but never quite like the one I had with "Barney", where every Senate staffer with a child under the age of 2 and lived in neighborhoods within 20 miles, I think, showed up. This was at the peak of "Barney's" popularity. I was absolutely fascinated with how these infants were so taken with this. What is the explanation? Has someone looked at why—"Mister Rogers" is another one, with a little bit older children—but this purple creature that managed to just mesmerize a country of infants. What is going on with that, and what sort of positive thing can you—either one of you may want to answer——

Senator COATS. This is really an important answer. I mean, the world has been waiting for this answer. Developmental psychologists everywhere are hinging on what you are saying.

Senator DODD. It fascinates me, because how do you duplicate that? How do you find something that is so positive, that there is such a positive response to a positive message, which is what I found intriguing. That, we see visibly. We do not go around and subject children consistently to negative, hostile images. But it seems to me you might draw some conclusions—if children react so positively to such a positive image as this "Barney," and we obviously, as I say, do not subject children, as we do laboratory animals, to a kind of barrage of negatives, but it seems to me that you might find some corollaries to be drawn from that.

Dr. CHUGANI. Oh, yes, and that is being studied. Laboratory animals that are raised in a hostile environment will be hostile, even when they are removed from that environment, provided that exposure comes during the early days, in the case of rats.

But, with regard to "Barney," I think it is the richness of that program and the many different senses that it stimulates—the music, the colors, the emotional part of that, and the friendship. And I think it is the complexity of this that is very positive. I think that if you were to barrage a baby with a lot of negative stuff on television, you would find that a baby would be very interested in that as well—a child, rather.

Senator DODD. Last—and then I will let my colleagues come in—I mentioned briefly in my opening remarks that I had tried during the budget debate here to offer an amendment to really focus on this conception to 3 period. What I asked for was about $13 billion over 5 years for Healthy Start, Early Start, Head Start and child care—that infant care period—Healthy Start, which has been a tremendously successful effort in these neighborhoods to get these mothers early on to start on a proper nutritional basis. In fact, I have talked to my colleague from Indiana about this, about putting together a package that really tries to focus on that critical period of zero to 3, and how we might try to expand and get more people involved so that we can at least support those efforts in that period of time.

I am very pleased to hear you confirm, Dr. DeCasper, the importance of that conception period on—that healthy start period—and then, of course, those first reactions that Dr. Chugani was talking about as well.

And again, I want to emphasize to you, I do not know of anyone up here who does not agree with the notion that the ideal situation, obviously, is to have parents. We have got welfare-to-work, welfare reform—we are going to have a lot of women who are on welfare who are going to work in the country, and people applaud that, and I do as well. One of the major problems, our Governors are telling us, is that it is a lot more expensive to pay for child care than it is for welfare. The Governors are not excited about coming up with money for child care. But in the absence of coming up with money, the quality of child care will suffer. Many children will not be in the best environments, particularly in poor neighborhoods where the choices are much more limited than they are in more affluent neighborhoods where people can shop for child care or have the means to go to alternative sites when they are not happy with the choices.

So if we are going to look at this, we have got to look at the totality of it and the implications, or we are going to have, looking back in 10, 15 or 20 years, a lot of kids we have put into harm's way, not albeit intentionally. We are going to look and wish that we had thought this through more thoroughly and realized that there is a cost associated with this. And I think it is a cost worth investing in. I think it is worthwhile to have people working. I think it is worthwhile to have children in good, quality environments when they cannot be with their parents. Everyone benefits from that.

But we have got to think this through. It has got to be thought through in its entirety if we are going to succeed. Your testimony this morning, I think, really helps underpin what many of us have been saying for some time: we support welfare reform but also understand that you have got to do it in a way that works intelligently. So I thank you for your testimony.

Thank you, Mr. Chairman.

Senator COATS. Senator Dodd, thank you very much.

Let me just remind the panel, and I am reminding myself also—panel 2 is designed to address the policy questions and we have the medical experts here, so to the extent that we can, reserve policy questions for panel 2, I think we can get into an important discussion on that.

Senator Hutchinson.

Senator HUTCHINSON. Thank you, Mr. Chairman. Thank you for calling the hearing, too.

I extend my thanks to the witness panel as well. It was fascinating listening to your testimony and, Dr. Chugani, your slide presentation was impressive. I was especially interested in the slide about the Rumanian orphans and the effects of the emotional deprivation that they experienced before being adopted by American families. If I heard you correctly, you used the analogy of cataracts to indicate that much of the damage incurred from this deprivation is irreversible. Can you expand on that?

When there is that kind of deprivation very early on, and then the environment is dramatically improved, to what extent is that reversible, and are there studies relating to that? I ask the same question of you, Dr. DeCasper, as well.

Dr. CHUGANI. I think this brings us to the concept of what we call critical periods. It really depends upon what kind of influence you are talking about. Critical periods are times during development when you can change the way the brain is going to function or not function. And, as I mentioned, some modalities are very easy to study, such as vision. We know very well that, with vision, if you do not get visual input in those first 2 years, even if you correct the situation, it is too late.

Is that true for emotion? We do not know. It is much more difficult to understand. And I really do not want to give the notion that those who have adopted Rumanian orphans have a permanent situation. As I study them now, they are abnormal. Their images and their brains, the way their brains are functioning is clearly abnormal. But we also have some children we have studied who are normal, and those tend to be the ones who are adopted at a much younger age.

We do not have enough data to really address the crucial point of how long do they have to be in the orphanage prior to adoption, because there are many factors we cannot control for. The orphanages tended to differ, and the exposures or lack of exposures also differed, so these are very difficult points to control for. But we are following them very closely, and we hope that, with the continued interventions that they are getting, that at least some of this will be reversed.

It is quite clear that many of these children have an attachment disorder where they, on the outside, tend to be very friendly and will smile and laugh and be very normal, but when you really study them and you look at their interactions, they are quite flawed. Is this permanent? I do not know.

Senator HUTCHINSON. You hear a lot today about the physical effects in prenatal development, from fetal alcohol syndrome, smoking, secondhand smoke, or even excessive or loud noises. But it would seem from your testimony that emotional deprivation or an abusive situation in those early days—postnatal—is every bit as serious as what some of these physical effects would be. Is that a fair assessment?

Dr. CHUGANI. I would tend to concur with that, yes.

Senator HUTCHINSON. Dr. DeCasper.

Mr. DECASPER. I agree with the concept of critical period. Programs that are designed to influence developmental outcomes have to be comprehensive programs because of concepts like critical period. The critical period for language is 10 years. The critical period for vision is less than 2 years. And the critical period for emotional development, I am not sure, but I think I agree with Dr. Chugani that it is relatively short over the first several years.

Senator **HUTCHINSON**. Dr. DeCasper, one thing I found interesting was when you were talking about how a mother has a much greater capacity for quieting a child than you do. Is that a reflection, I suppose, upon the bond that has developed through the prenatal development?

Mr. **DECASPER**. It is a reflection of, I believe, the fact that the sounds she makes are very familiar to the infant. The infant has been hearing those sounds every since maybe the 24th or the 25th week. And what we know is that very young organisms like familiar things, so that the system is biased to build familiarity between the infant and the mother. I think that is why she is effective.

Senator **HUTCHINSON**. I know that we will examine the policy later, but I would think that that has all kinds of implications on a working mom who has got to get back into the workplace in the first month or 2 months after a child is born and whether a quality, healthy environment is available for the child. Could you comment?

Mr. **DECASPER**. In a very general way, I think public policies that allow parents to interact with their children in ways that they think are appropriate and culturally acceptable are the appropriate policies. I believe that we do not know enough to be prescriptive in our policies, but we know enough that the general kinds of environments that are healthy for the baby and the parents are those that can be influenced by leave policies and things like that. I hope that is the kind of answer that——

Senator **HUTCHINSON**. Our culture has changed so fast in this whole area. Are there any long-term studies, or have we been down this road far enough to have completed studies, on the impact upon children who are reared primarily in a child care environment as opposed to a traditional home?

Mr. **DECASPER**. There are, but what I would caution you to appreciate is that the societies into which those children then become inserted and within which they function are mapped onto the childrearing practices. I do not believe there is a magic bullet for any one particular kind of intervention or policy. You have to appreciate the culture, and our culture is a culture where we now have working moms, working dads; if that is the fact of life, the policies have to adapt to that, and we have to do the best we can under those circumstances. And I think it will be just fine if we find the appropriate policies.

Senator **HUTCHINSON**. Dr. Chugani.

Dr. **CHUGANI**. I think the data are clear that if one is put in quality—and I really emphasize the word "quality"—foster care, there is no difference between the child raised in that situation, provided there is continued interaction—obviously, quality interaction with the natural parent or caregiver—there is no difference. There are data on that, but I really want to emphasize the word "quality." You do not want to just leave a baby or a child in a place where there is supervision to make sure the child does not swallow something or hurt himself, and that is the nature of the responsibility of that person—that is not enough. You need the kinds of interaction.

Senator **COATS**. Senator Hutchinson, your time has expired.

Senator **HUTCHINSON**. I could not see the light.

Senator **COATS**. I did not turn the lights on because I thought it was such a fascinating subject, and I did not want to cut anybody off.

Senator **HUTCHINSON**. Thank you, Mr. Chairman.

Senator **COATS**. I am going to deviate again now, and if anybody has to leave on the first panel, you can. I am going to call the second panel to join you, because it is impossible to separate the medical aspects from the policy aspects. We are deep into policy. There are people on the second panel who are squirming in their seats, because they have spent a lifetime addressing these very types of questions. If you have to leave, Mr. DeCasper, I understand. But what I would like to do is invite you to stay, and bring the other three up, and then have them give brief opening statements and then——

Senator **WELLSTONE**. Could you indulge me? I just have a question or two, and I have to leave. Could I do that with all four panelists? I really appreciate that.

Senator **COATS**. I would be happy to do that.

Let me introduce that second panel. I will turn then to Senator Wellstone who has to leave.

We have blended here the policy and the medical science, and I want to give the policy people an opportunity to respond to what I think are very important questions.

First, we are joined now by Mrs. Diane Fisher, a Ph.D., a clinical psychologist who received her Ph.D from the University of Chicago. She has written numerous articles and speaks frequently on parenting and child advocacy issues.

We are joined by Mrs. Carlie Sorensen Dixon, a retired tax attorney who left a promising legal career to become a full-time mother of three. She has her juris doctorate from George Washington University, and a master's in tax law from that same university. She is a founder of two organizations: Lawyers at Home and Mothers First, which provide support for mothers and their decision to leave the workforce in order to care for their children.

Then Dr. Edward Zigler, who is a person who has testified before Congress on many, many occasions. He has a long, long list of credentials. He was a member of the National Planning and Steering Committee for both Head Start and Project Follow-Through. He was responsible for administering the Nation's Head Start program in 1970, when he was named by President Nixon to become the first director of the Office for Development and chief of the U.S. Children's Bureau. He has served as consultant to a number of Cabinet-rank officers and has, as I said, testified many, many times before the Congress. His work on the Family and Medical Leave Act was critical to passage of that Act. A recipient of numerous awards and achievements, he is currently Sterling Professor of Psychology at Yale University, where he is also director of the Bush Center for Child Development and Social Policy.

We welcome our three additional panelists. I will turn to Senator Wellstone, who has other conflicts, and then we will allow—if it is all right with Senator Reed and Senator Murray—the three to make their statements, and then we can get into these policy questions.

Senator Wellstone.

Senator WELLSTONE. Thank you, and there is an irony, too, Mr. Chairman because—I am glad we are bringing together the science and the policy—the reason I have to leave is that I have to speak to a gathering of the National Coalition of Homeless People, who are faced with a national crisis in the making. I think the estimates are that about 40 percent of the homeless are women and children, and because of cuts and services, they are not able to provide even the health care coverage they have been able to provide to women and children. So there is a kind of an irony here, and that is why I have to leave.

I am going to ask one question that maybe each of you could just—however you want to—respond to. Rather than a number of different questions, that would be the most effective use of time. But just one quick observation. I think at the very end—I know when we were talking about prenatal care, it is very important—I kept hearing "mom" and it made me nervous. Dads fit in here, and I just want to make it clear. I kept hearing mom and mom and mom, and I——

Senator COATS. But as my wife reminds me, not in the same way the mom does—at the prenatal stage, at least.

Senator WELLSTONE. I understand, but I just want to make it clear, we were also talking zero to 3, and zero to 6, and I would hate to have one of these situations where, if things do not work out well with children, it is the mom. Dads fit in, and that is just an observation.

I guess my impatience, Mr. Chairman, with the hearing, and in a way, I think Dr. DeCasper made this point, and I heard it said a couple of times—and maybe my impatience is just off-base—but the quote I have here is that we do not necessarily know enough to advocate prescriptive policies. I heard that said a couple of different times. I just want to know how much more we need to know.

Let me just give examples. Welfare—we heard about the welfare bill. Well, welfare-to-work is fine, but the fact of the matter is a lot of States are not supplying the additional money for child care. We already know that. So now we are going to have this bitter irony where, if we say that children need a parent at home, they need this nutrition—and now the single parent is working, but we are not providing child care? Don't we know enough to know that that is not going to work well? We are going to cut food and nutrition programs by 20 percent—that is in that bill. The safety net program, food stamps, we are cutting by 20 percent. Don't we know enough to know that that does not work?

We know that it is critical that an expectant mother have a good diet. Not all women—certainly not these homeless women—are able to get that. Don't we know enough to know that we ought to make sure they get it?

We know that there is all this discrimination when it comes to substance abuse treatment where people cannot even get the coverage or the services have been cut. Don't we know enough that we ought to provide those services?

We know that consistency in the "rearing relationship"—I am quoting someone—is critically important. Well, if it is not at home, and it is in child care—we have Lucille—David Packard was deputy Secretary of Defense under Ronald Reagan. They just wrote a report saying that the State of child care is not a pretty picture and that we are going to need to invest over $100 billion as a Nation. Don't we know enough?

How much more do we need to know before we start prescribing? That is my impatience with this testimony. We know all of these things. Why are we harping on the complexity of all of this to the point where it has become the ultimate simplification? This is a cop-out. We know all of these things—or, am I wrong?

Ms. Fisher. Well, I am glad you used the word "complexity," Senator, because I think that is the issue, and I think that is how we get hung up.

We do in fact have a lot of information. In the last 2 years, particularly—most of you have read the NICHD studies—more new information about the importance of the attachment process in day care. And I feel like what we know from that and what we do with that is what all of us seem to be struggling with.

The complexity is that there is one group that seriously needs high-quality day care. The welfare reform discussion—what we are going to do with those mothers and children—needs to be seriously discussed and acted upon, and certainly we have information about how to improve quality day care. But who benefits from quality day care and whether more policies should be driven toward allowing parents to stay at home with their children, when we know also from the research in the last 2 years that that would be optimal for most children, that is the complexity of the question.

Senator Wellstone. Welfare reform is going in the opposite direction, in all due respect. We are not allowing them to stay at home. We are telling them get out of the home—but we also do not have the child care.

Ms. Fisher. And that is one side of the issue. I agree with you.

Senator Wellstone. But on the whole general question, aren't there are bunch of things you can prescribe that we ought to do right now, policy-wise?

Ms. Dixon. Absolutely. The major body of my remarks really relates to the Tax Code and also some of our labor policies which, from my perspective, seem to subsidize nonparental care to people who are not necessarily in the low income welfare ranks and in addition, probably prevent a lot of parents from staying at home who would like to. I think there is an adequate number of polls to indicate that a lot of working parents do not want to be in the workplace—they want to be at home with their children, particularly when they are small. And our tax policies have taxed a lot of families into the workplace.

For instance, the whole purpose of the dependency exemption was to not tax the money it takes a family to feed, shelter and clothe their children. We are taxing those dollars, and if we had a dependency exemption that was brought up to 1990 dollars, many families would not need to have two parents in the workplace, particularly in the early years.

So there are things that we can do that address those concerns.

Senator WELLSTONE. And this would be for a mother or father to stay home?

Ms. DIXON. This would be for a mother or a father, and you can target it. Obviously, it is expensive, but it is also the right thing to do. You should not be taxing those dollars, and you can target it for the early years.

Senator WELLSTONE. Any other policy prescriptions?

Mr. DECASPER. Yes, Senator Wellstone, I would just like to comment.

First, I do not disagree with anything that you said. I suspect that sometimes it is impatience with scientists—the differences between our two jobs, I think.

But I would like to, just for the record, read the whole sentence that you commented on. It was in the context of providing experiences for pregnant women—prescribing experiences for pregnant women with the aim of affecting the experiences their fetuses have. And what I said at the time was that I do not believe that we know enough to advocate policies that would prescribe experiences that healthy, normal fetuses should have.

I was referring specifically to fetuses, but we do have policies that affect fetal development and very good ones, because we do know enough to do that. So I agree with you.

Senator WELLSTONE. Please—whenever my time is up, you can stop me.

Dr. CHUGANI. I think I want to add that, for those who want to work but cannot afford quality day care from zero to 3, you can put a policy in place that will help them achieve that goal—for those who want to work.

Senator WELLSTONE. Absolutely—not on the cheap.

Dr. CHUGANI. We do not need more data on that. The data are in. We have the data that we need.

Senator WELLSTONE. Thank you.

Senator COATS. Thank you, Senator Wellstone.

Senator Gregg.

Senator GREGG. Senator Coats, I want to congratulate you for holding this hearing. I regret that I was not here earlier. I unfortunately had another obligation and am holding a hearing this afternoon on the other end of the spectrum, on Alzheimers' effect on the mind later in life.

My question would be—and you probably answered this, so maybe you could just summarize it for me. I am interested in knowing what percentage of a child's development is affected by the period when they are in the womb, and during what periods in the womb is that development most pronounced—the first trimester, the second trimester, the third trimester? I would invite whomever would like to comment on that.

Senator COATS. Dr. Chugani, you are our medical expert here.

Dr. CHUGANI. As a neurologist, I see, obviously, a lot of children who have had some event that occurred while they were still in the womb, and the kinds of disorders that they have really span the entire three trimesters. Certainly, the kinds of insults to the fetus in the first trimester are devastating, and in fact, many of them do not make it through the rest of the pregnancy.

The ones who do make it are very severely involved. There is usually a very malformed brain, where brain cells have not migrated to their proper locations. The folds in the brain that we call the gyri do not form normally, and there is a variety of very severe insults. There are, obviously, second trimester and third trimester insults. And we do not know where fetal alcohol fits with this. But those then tend to lead to milder abnormalities, which can still be very crippling—various forms of learning disorders; certainly fetal alcohol syndrome or cocaine exposure can give you attention deficit disorder, but it can also give you something worse than that.

So it really depends upon which insult and which trimester you are talking about, but the answer to your question is, yes, the entire pregnancy is a vulnerable period. And I think I tried to make the point that the first 10 years, postnatally, is also a very vulnerable period, but we have some control over that.

Senator **GREGG**. Can you quantify it in some way? For example, if somebody were using cocaine and had severe alcoholic problems in the first trimester but then stopped for the last two trimesters—or vice versa, did not do it in the first, but did it in the second—do you have any idea or any thoughts on what impact that would have?

Dr. **CHUGANI**. I am not an expert on the toxicology of that, but maybe somebody else here is.

Mr. **DECASPER**. I do not have an answer to that specific one, except what I can remember from the literature, which is on animal models, which is that if you look at a phenomenon-like cleft palate, for example, is a characteristic of fetal alcohol syndrome, some of them— that can only occur during certain times in gestation.

We have been exposed to the concepts of critical period and plasticity earlier, and those concepts are appropriate prenatally with respect to insults to the developing embryo and fetus, and clearly, very early insults are usually fatal. And then, thereafter, the expression of the insult depends upon the level of development and the nature of an insult, which are concepts that drive Head Start. You tailor the program to the appropriate developmental age, if you will.

I am sorry that is a longwinded answer, but the effects of alcohol depend upon the age of the embryo and fetus at the time of the alcohol insult.

Senator **GREGG**. What is the capacity to recover from the major insults which are survived by the child when it is in the womb? For example, somebody who is on a drug—cocaine—or who is a severe alcoholic, or who maybe was not even severe, but consumed a lot of alcohol and smoked—what is the capacity once the child is born to correct those types of symptoms that have been created by that type of insult?

Mr. **ZIGLER**. There is a great deal of capacity. Our best evidence is low birth weight. If you are a low birth weight child, and you enter this world, and you go to a very poor home, you go downhill. On the other hand, if you go to an upper middle-class home with that same low birth weight, the baby catches up and does much better.

So it is not like the deficit is there forever. The ultimate deficit is determined by what happens in utero, plus the kind of environment the baby experiences she arrives upon the scene.

Mr. DECASPER. If I may just elaborate on that answer, typically, what happens is that if there is an inappropriate prenatal environment—for example, an environment that contains alcohol or drugs—chances are very good that is also characteristic of the postnatal environment. So what we end up with is a situation that he did not describe—well, he did describe it—namely, if you persist in an inappropriate environment, then development continues apace.

One reason I like developmental psychology, or development in general, is that it is a hopeful science. It is a very hopeful science.

Senator DODD. Judd, I do not know if you mentioned this, but the CDC reports that between 1991 and 1995 alcohol abuse by pregnant women rose fourfold, despite of all the information out there about the adverse effects on the fetus. Lately, there has been a ton of information and public service announcements. I was stunned by that statistic—fourfold.

Senator GREGG. And it is the same with tobacco.

Thank you.

Senator COATS. Thank you. My staff reminds me that I had indicated that I would allow the second panel to make their statements. That reminds me that the elimination processes of some of my synapses went too far, and I am sorry that I overlooked that. With the forbearance, again, of my colleagues, Dr. Zigler, if it is all right, I will start with you, and we will summarize your statements, and then Diane Fisher and then Carlie Dixon. Then we will open this back up, and I will call on Senator Murray for questions.

STATEMENTS OF EDWARD ZIGLER, STERLING PROFESSOR OF PSYCHOLOGOY AND DIRECTOR, BUSH CENTER FOR CHILD DEVELOPMENT AND SOCIAL POLICY, YALE UNIVERSITY, NEW HAVEN, CT; DIANE FISHER, KENSINGTON, MD, CLINICAL PSYCHOLOGIST AND SPOKESPERSON FOR THE INDEPENDENT WOMEN'S FORUM; AND CARLIE SORENSON DIXON, CO-FOUNDER, LAWYERS AT HOME AND MOTHERS FIRST, ARLINGTON, VA

Mr. ZIGLER. Thank you, Mr. Chairman. I am particularly pleased to appear before you, Senator Coats. If you remember, our interactions go back to your days in the House, and over all those years I have come to recognize you as a very strong champion of America's children and their families.

As was mentioned, I am Sterling Professor of Psychology at Yale University and director of the Bush Center in Child Development and Social Policy. I have studied the growth and development of children for over 40 years. In the 1970's, I was named the first director of what is now the Administration for Children, Youth and Families. I was chief of the United States Children's Bureau and was the Federal official responsible for administering our Nation's Head Start program.

The brain research that you have heard about today is indeed exciting. It tells us that an infant's brain grows rapidly in the first weeks following conception and in the first few weeks and months of life thereafter—more rapidly than previously suspected—and that the early experiences of the growing child play a determining role in the basic wiring of the brain for life.

For example, a baby who is talked to often and sensitively will develop a greater capacity for the complexities of language than will babies who receive low verbal stimulation or whose attempts at vocalization are ignored. Thanks to the new research, we cannot just attribute these differences to genetics or nature. Nurture plays a powerful role, starkly visible in MRI images of the developing brain. Unstimulated, unused neural pathways are literally pruned away forever, beginning at about the age of 2; only the neural connections that have been used remain.

In response to the new scientific knowledge about the growth of the brain, the question for Members of Congress and other policymakers is this: Does American society today support the optimal development of children in the critical early years? The answer, unfortunately, is no.

I am here to deliver a clarion call. There is a tremendous disconnect—a gigantic disconnect—between the knowledge base that you are hearing this morning and the policies that our Nation is now pursuing in regard to children and families.

In the not-too-distant past, the vast majority of mothers stayed home with their young children, at least until they entered school at age 5 or 6. But economic pressures over the last 25 years or so have profoundly changed American family life. Now, 53 percent of all the mothers of babies under 1 year of age work outside the home. If that woman has gone to college and is a college graduate, that number is now 68 percent.

Most mothers want to work fewer hours and spend more time with their young children but find they cannot do so for financial reasons. To date, social policy in America has done little to help families deal with conflicting responsibilities toward work and childrearing. Children are suffering.

As a society, we will all pay a price for the compromised development and lost brain power of the generations behind us. New, enlightened national policies, however, could turn the situation around. I have three basic recommendations.

The new brain research demonstrates how critical it is for a mother to spend the first months of life in close interaction with her child. Thus, the Family and Medical Leave Act of 1993 should be expanded to guarantee a paid infant care leave to parents of newborn and adopted babies. Congress should be commended for passing the current law and Senator Dodd especially for his leadership role in that effort.

However, it is time to strengthen the provisions of the law, which now provides only 12 weeks of unpaid leave and exempts employers with fewer than 50 employees. An improved family leave act should allow parents 6 months to care for their infants, with at least 3 months paid, and should apply to all workers. Various mechanisms for financing a paid leave should be explored, including temporary disability insurance, the unemployment insurance system and the Social Security system.

The United States is the only industrialized Nation on the face of the Earth that does not provide its citizens an income-protected leave to care for newborns. It is an embarrassment to point out to you that 30 Third World countries have paid leave—Ghana, in darkest Africa, has a paid leave. Parents and their new babies need time together to establish the rhythms of life, to reach a level of sensitive attunement and to become securely attached.

Second, the problem of child care in America should be seriously addressed. Today, child care in America is a disaster for our children and for the development of their brains. Excellent child care exists for infants and toddlers, but it is the exception, not the rule. Most families are not able to find out-of-home care that is both affordable and good for their children. In a recent study of child care centers in four States, 40 percent of the infant and toddler rooms were observed to be unstimulating, and even worse, to actually put children's health and safety at risk. Only one infant toddler room in 12 provided developmentally beneficial care.

The news is no better for family day care homes, where many young children spend long hours. Only 12 percent of all regulated family day care has proven to be good for children, only 3 percent of nonregulated care, and only one percent of out-of-home care provided by relatives. The rest is mediocre or inadequate.

These grim statistics mean that the majority of caregivers are not engaging children in the kind of conversation and other activities that enhance growth and development.

One important step toward improving child care would be to set reasonable national standards for child care quality to be used only as guidelines by the States. Currently, standards for child care practice vary widely from State to State. A recent analysis of State regulations conducted in my center for center-based infant and toddler care found that no State—not one—has regulations that require good child care practice, and only 17 States can be characterized as minimally acceptable. The rest are rated as poor or very poor.

As individual States respond to an increased demand for subsidized child care under welfare reform, many of these States are looking for ways to relax or circumvent their own standards for regulated care in an attempt to pay less than what they know good care costs. We have a new term in child care—it is called "exempt care." This is going to be the kind of care received by the mothers who are leaving the welfare roles. They will not even measure to the already poor standards that most States have. This trend is harmful to children and should be resisted. In addition to insisting on decent standards for child care quality, we should also find ways to improve the training of child care workers and to also improve their abysmally low salaries.

My final recommendation is to support the expansion of parent education programs, such as Parents as Teachers, which provide home visits and timely information about child development to parents of children from birth to age 3. Healthy Families America is another worthwhile program of this sort. These programs are voluntary and very popular with parents in States like Missouri, where they offer it through the public schools.

But I did not come here to depress everybody—let me end on a positive note. We should be aware that our Nation's relatively new Early Head Start program—this is a program from pregnancy through age 3—is totally consonant with the new research on brain development. I was delighted to hear at the recent White House conference on brain development a few weeks ago that the Clinton Administration is planning to expand this program by 100 sites.

But if I were to leave you with one recommendation that would make a great deal of difference, I have given up the fight, because I have engaged in it for 30 years now, of trying to get national child care standards which this country could use. That is a lost issue, as far as I am concerned. The Government Association has opposed it; and the lobbyists from outfits like KinderCare have opposed it. But one thing that you could do is to put somewhere the standards that the National Association for the Education of Young Children have, and make them public, so that mothers and fathers all over this Nation and advocates at the State level would at least now that the State standards are really not the kinds of standards that guarantee their children the type of environment that will guarantee their optimal brain development.

Thank you.

Senator COATS. Dr. Zigler, thank you very much.

[The prepared statement of Mr. Zigler follows:]

PREPARED STATEMENT OF EDWARD ZIGLER

Thank you, Mr. Chairman, for giving me the opportunity to speak before this committee on how new discoveries about brain development should impact national policy. I am Sterling Professor of Psychology at Yale University and director of the Bush Center in Child Development and Social Policy. I have studied the growth and development of children for over 40 years. In the 1970's, I was named first director of what is now the Administration for Children, Youth and Families and was the Federal official responsible for administering our Nation's Head Start program.

The brain research you have heard about today is indeed exiting: it tells us that an infant's brain grows rapidly in the first weeks and months of life—more rapidly than previously suspected—and that the early experiences of the growing child play a determining role in the basic "wiring" of the brain for life. For example, a baby who is talked to often and sensitively will develop a greater capacity for the complex use of language than will babies who receive line verbal stimulation or whose attempts at vocalisation are ignored. Thanks to the new research, we can't just attribute these differences to genetics, or "nature." Nurture plays a powerful role, starkly visible in MN images of the developing brain: unstimulated, unused neural pathways are literally pruned away forever beginning at about the age of two; only the neural connections that have been used remain.

In response to new scientific knowledge about the growth of the brain, the question for Members of Congress and other policymakers is this: does American society today support the optimal development of children in the critical early years? The answer, unfortunately, is no. In the not-to-distant past, the vast majority of mothers stayed home with their young children at least until they entered school at age 5 or 6. But economic pressures over the last 25 years or so have profoundly changed American family life: now, 53 percent of all the mothers of babies under one year of age work outside the home. Most mothers want to work fewer hours and spend more time with their young children, but find they cannot do so for financial reasons. To date, social policy in America has done little to help families deal with conflicting responsibilities toward work and childrearing. Children are getting the short end of the stick We will all pay a price for the compromised development and lost brain power of the generations behind us. New, enlightened national policies, however, could turn the situation around. I have three basic recommendations.

The new brain research demonstrates how critical it is for a mother to spend the first months of life in close interaction with her child. Thus, the Family and Medical Leave Act of 1993 should be expanded to guarantee a paid infant care leave to parents of newborn and adopted babies. Congress should be commended for passing the current law, and Senator Dodd especially for his leadership role in that effort. However, it is time to strengthen the provisions of the law, which now provides only 12 weeks of unpaid leave and exempts employers with fewer than 50 employees. An improved family leave act should allow parents 6 months to care for their infants—with at least 3 months paid—and should apply to all workers. Various mechanisms for financing a paid leave could be explored including temporary disability insurance, the unemployment insurance system and the social security system. The United States is the only modern industrialized Nation that does not provide its citizens an income-protected leave to care for newborns. Parents and their new babies need time together to establish the rhythms of life, to reach a level of sensitive attunement and to become securely attached.

Secondly, the problem of child care in America should be seriously addressed. Excellent child care exists for infants and toddlers, but it is the exception, not the rule. Most families are not able to find out-of-home care that is both affordable and good for their children. In a recent study of child care centers in four States, 40 percent of the infant and toddler rooms were observed to be unstimulating and, even worse, to actually put children's health and safety at risk. Only one infant/toddler room in 12 provided developmentally beneficial care. The news is no better for family day care homes, where many young children spend long hours. Only 12 percent of all regulated family day care is good for children, as is 3 percent of non-regulated care and 1 percent of out-of-home care provided by relatives. The rest is mediocre or inadequate. These grim statistics mean that the majority of caregivers are not engaging children in the kind of conversation and other activities that enhance growth and development.

One important step toward improving child care would be to set reasonable national standards for child care quality, to be used as guidelines by the States. Currently, standards for child care practice vary widely from State to State. A recent analysis of State regulations for center-based infant and toddler care found that no States have regulations that require good child care practice, and only 17 States can be characterized as minimally acceptable. The rest are rated as poor or very poor. As individual States respond to an increased demand for subsidized child care under welfare reform, many are looking for ways to relax or circumvent their own standards for regulated care in an attempt to pay less than what they know good care costs. This trend is harmful to children and should be resisted. In addition to insisting on decent standards for child care quality, we should also find ways to improve the training of child care workers and to also improve their abysmally low salaries.

My final recommendation is to support the expansion of parent education programs such as Parents as Teachers, which provide home visits and timely information about child development to parents of children from birth to age 3. These programs are voluntary and very popular with parents in States, like Missouri, where they are offered through the public schools. On a positive note, we should be aware that our Nation's relatively new Early Head Start program is totally consonant with the new research on brain development. I was delighted to hear at the White House a month ago that the Clinton administration is planning to expand this program by 100 sites.

Senator COATS. Senator Murray.

Senator MURRAY. Mr. Chairman, I am going to have to leave, and if I can just make a quick comment on Mr. Zigler's testimony, if you would not mind. I know that there are others, but I apologize, I have to leave.

Senator COATS. Of course.

Senator MURRAY. I just have to comment—I am so absolutely delighted to hear your testimony on the need for child care and parent education and family leave. I have been a little disturbed by some of the tone of this hearing—that it sounds like, you know, that there is a bad mom out there, and therefore we have all of these horrible kids out there. And the fact is, you have just expanded this conversation to say we all have a responsibility to make sure that the parents get the good information; that when a mother has to work or a father has to work, that there is child care available; and that we as a society emphasize that we need to support those parents if we want them to be at home. We cannot just say, "You be home."

So I really appreciate that, particularly because before I was a United States Senator, I was a parent education instructor at Shoreline Community College in my hometown of Seattle, WA. My job was to teach parenting skills to parents and to teach preschool to the children of those parents. It was a combination that was highly successful. The parents were in the classroom, learning from other parents, learning from a teacher. It was a professional class, and I will tell you that the reason that I got into it was that I learned, even though I had a college degree, as soon as I had children, I had no clue how to raise children.

Parents want to do the right thing. Mothers want to do the right thing. They want to provide good nutrition. They want to provide good stimulation. Any mother—the poorest mother to the richest mother—the rural communities, urban communities, no matter where they are. Parents want to do the right thing. But we have a responsibility as a society, as Congress, as a country, to help provide that kind of information, so I was particularly pleased to hear your testimony, and I hope that as we continue this conversation, we do not just say there is only one route for every mother or every father. There are a lot of different choices for all kinds of parents, and we need to find a lot of different ways to help support all of those different kinds of choices.

Thank you, Mr. Chairman.

Senator COATS. Senator Murray, thank you.

Diane Fisher.

Ms. FISHER. I thank you, Senator Coats and committee members, for inviting me here today.

I am a clinical psychologist and a mother of three children—two school-age boys and one toddler daughter. I believe deeply in this issue, and I appreciate Senator Murray's comment.

I am concerned that only one route to solving this problem of our concern for babies and children is being explored thoroughly and is being touted in the media, and I am here to look at both sides of this conversation, and I hope that will stimulate some more thoughts and questions because I feel this is crucial.

My belief is that there is no one we can train, certify or develop to be with a child who will do a better job than the parent. And I do not think that, because this is the 1990's, that possibility is over, and I do not think that is an assumption that we should feel that people already know and so can be uncommented upon. I think we really need to be comfortable discussing the difference between the two.

The place I would like to start—Dr. Carson told the inspiring story of his mother, and I know a lot of us read about it in Parade magazine—I think that the polls show that most parents do not feel like they can be optimal parents to their children when both of them are working full-time. To have a full-time, working single parent mother like Dr. Carson's is a wonderful, inspiring story, but it is not how most parents feel. She is an exceptional woman, and I find her story very encouraging, but we should not take it as the norm for the kind of caregiving most children can receive.

Let us think about quality for a minute. Lately, we have heard reports that giving children high-quality day care is the equivalent of being at home with mom and dad. I think it is important to look at this closely. In reality, how much "quality" can the quality of day care accomplish?

Let's think of a story—and I see this all the time when I am driving back and forth, and I am sure you do, too—think of the mother who has to load her children in their car seats early in the morning, sometimes with a frozen waffle in their hands for breakfast, still in their blanket sleepers or their "Little Mermaid" nighties, and take them off to day care. This is not an unusual image for the full-time working mothers in our country.

What happens at the end of what is often a 10-hour day for that mother and for those children—and this is what we are hearing from day care workers; we are not talking about 7 and 8 hour days—is that parent able to be with her child in the special, sensitive, attuned way that all of us are hearing is so important? These children miss their mother's perspective on the world,her comments, her jokes, her interpretations, the mirror back to them of what their family identity is, all day, and when she is rushing from task to task at the end of the day, they probably miss it then, too. And this is a mother who deeply loves her children that this is occurring with.

In polls, low-income women are the ones who often say that they would like better quality day care. When this woman, this mother, who is going through this kind of scenario feels she has no other choice, to ask her if she would like better quality of day care for her children is perhaps a disingenuous question.

To say that those children, if they come to the day care center, have a warm breakfast waiting for them and high quality, responsive caregivers—to say that that makes this scenario okay is perhaps missing the point. The mother has no choice but to miss her children, and her children have no choice but to miss her.

Recent studies of the brain have underscored the critical importance of the environment and that the mother is the infant's environment. The child has irreplaceable, hardwired biological ties to mother. We are uncomfortable with that; it is a little bit politically incorrect, but it is the truth.

As excited as we are about infant brain development, we must remember the emotional development of the infant is the fuel that drives the car. There is no one that disagrees with this. What does this mean? For the zero to 3 age group, it means time spent drilling with flash cards is wasted. Dr. Chugani made the point that it is the lack of parental nurturing or the presence of parental nurturing—the protection from negative influences—that is the critical element in that zero to 3 time period. The infant's emotional security, the ability to feel loved and responded to by the mother, is the most important element. The cocoon of security between the mother and the child must be protected, not interrupted.

This is not controversial information, but we tend to not be too compelled when we listen to this. There is nothing dramatic or glitzy about this information. An infant's attachment to his mother is very subtle and quiet, but crucial if we are worried about the future of today's children.

Imagine a brilliant, stimulated, optimally educated child who is lacking in self-esteem, self-control, identity or discipline. This in fact is what we are hearing about in our schools today—privileged, indulged children who are wired to the Internet, but without a moral compass or a sense of connection to the adults who are supposed to be present in their lives. Unrealized genius is a cliche in our society; depressed prodigies; brilliant psychopaths. When we speak of critical windows of neural development and infant stimulation, we must keep in perspective the need for emotional grounding.

When we say "infant stimulation," what are we talking about, exactly? Black and white mobiles? Primary colors? Vowel sounds? Specialized physical movements that someone needs training to achieve? No. We are basically talking about attachment and responsiveness to an infant.

We worry about what children 3 and even younger should know and be able to do, and I have been reading this in the media everywhere. The fact is, experiencing the everyday world on the arm of a loving parent is all the special stimulation and material and training that most children need.

We have heard how mothers are biologically hardwired to form a close emotional tie with their children. This is not a quick, 12 week maternity bonding experience, and anyone who is a parent knows this. This is a slow, gradual process of many seemingly trivial cues between the mother and the child—the mother learning the idiosyncratic needs of that baby—and anyone who has had more than one baby knows how idiosyncratic each child's cues and needs are.

Most of this is accomplished intuitively by a mother who is motivated by love and enjoyment of that child. It takes an enormous amount of motivation to want to pay attention to the subtle cues that an infant has. It is very rare to find a caregiver who is able or motivated to pay that kind of attention.

Experts connect attachment failures with later addictive behavior, loss of resilience to trauma, intimacy problems, school problems, depression and delinquent behavior. This is critically important.

There are some misunderstandings about attachment. In a recent zero to 3 survey, more than half of parents surveyed thought that the more caregivers a child is exposed to in the first 3 years of life, the better. In fact, attachment optimally occurs with a single person, and only after that is established—which is usually in the middle of the first year of life—is it constructive to introduce secondary caregivers.

What this means is that multiple caregivers, which are typical for children in institutional care, are very destructive to the attachment goals of this critical period. We are impatient with the slow, subtle infant schedules in this fast, goal-oriented culture.

Certainly, parents benefit from help, learning correct information about their children's development. However, there is something elitist about the idea that we cannot trust ordinary parents to successfully manage this early phase or the idea that ordinary parents cannot possibly nurture the infant as well as trained professionals. We have to think about what is that the child needs in that zero to 3 period. An aggressive, nationalized, early childhood intervention program is not what most parents want or need.

A counterargument that I often hear is that parents are not perfect; parents are often depressed, they are disorganized, they are withdrawn, they do not do the right things. When parents need help, let us educate them to know how to get it, but let us not assume the child has to have nothing but perfect, positive experiences. In fact, just being there with the child to learn about the parent and how to work it out over the long-term, without the underlying fear of being abandoned at any minute, is a wonderful gift. This is true, deep intimacy. If superficial positive images such as "Barney" and "Mister Rogers" were going to cure the emotional ills of this country, we would have much healthier children than we are looking at right now, because the media has saturated children with those images.

Our culture has had a romantic, almost wishful, perspective on parenting. We have wanted to believe in quality time. We have wanted to believe that no matter how many hours a parent is separated from the child, that parent will stay just as intimately engaged. We are seeing that this is not true. The "no more worries, day care is fine" headlines that all of us have seen, particularly in the last 6 months, after the recent NICHD studies were released—this longitudinal study has been misinterpreted, and many important points of the study have not been underlined. This was a study, for those of you who are not familiar with it, beginning at 6 months, examining the effects of nonmaternal care on mother and baby attachment and cognitive development. Let us look at what this study said and did not say.

First of all, most of the relieved headlines—"don't worry about day care"—focused on the part of the study that showed that children in high-quality day care had cognitive and language skills better than in low-quality. The more interesting data concerns emotional attachment. Interestingly, they found that it is a two-way street—both the child and the mother are affected by early separation. Both the child and the mother appear to be less engaged and responsive if there is early separation as measured at 6 months. Specifically, the mother's ability to sensitively respond to her infant at 3 years of age was affected by the amount of separation at 6 months. Similarly, the more hours of care baby was in the first 6 months, the less positively engaged baby is with the mother at later measures such as at 3 years.

The detrimental effects of mother and baby separation over time were also cumulative. The more total hours of separation, the less baby was positively engaged with mom at 2 and 3 years of age, while the mother was less sensitive and more negative with the child.

If emotional development and attachment are critical, day care is not an easy answer. I have great respect for studies that attempt to grapple with these issues, but let me comment on what is not measured.

Recently, the First Lady wrote that quality day care can produce the same quality 3-year-old as a stay-at-home mother can. That, of course, depends on what you are looking at. Science cannot quantify the important societal traits that we depend upon, such as courage, moral vision, compassion and character, and these traits are inextricably linked with nurturing and emotional development. Do we really have confidence that we can program this and certify people in instructing these traits?

I think there are other reasons why it is hard to deal with this. The child riding through the supermarket, or helping with the laundry with the stay-at-home mom—it is easy to look at that image and think that nothing is happening there. Nothing is being taught. The child is not being stimulated. Compare that with the media images of smiling reading circles, trained teachers and stimulating primary color environments. Who wins? It is easy to denigrate and trivialize the simple, day-to-day interactions of the mother/child world which are so critical and so helpful in moral development.

Additionally, some of us are uncomfortable even using the word "mother," and prefer "caregiver." We believe focus on the word "mother" is oppressive and politically incorrect and retrograde. We wish for parenting roles to be equal and the same, but children know, and children do not forget their mother or cooperate with these politically expedient agendas.

A favorite argument is to say, sure, more time with the kids is best, but the days of staying at home are over. In fact, the majority of parents of young children work out arrangements that do not require both of them to work full-time. The Department of Labor statistics are chronically misinterpreted. When we say that most young children have parents out of the home, that is based on statistics that include as little as working one hour a week, home-based businesses, part-time, flextime, freelancing. We need to really examine those statistics.

We are inundated with polls showing that parents want more time with children, not more day care. To say that day care is the only viable economic reality or model for the future is not valid.

Let us take a moment to focus more directly on the recent policy conversation. Despite the fact that the latest research confirms the importance of attachment, we are paradoxically calling for more and better nationalized day care. I agree with Dr. Zigler that there is a gigantic disconnect between the findings of these studies and the policy recommendations that seem to be emerging. The new day care and brain research is being used as a springboard to persuade Americans of the need for higher taxes, new Federal programs, expanded day care. Mrs. Clinton is calling for a new entitlement—subsidies for working parents. I would like to ask for subsidies for all parents, so that they can make that choice. When day care is presented not as an option, but as the model for the future, we have to ask ourselves why.

Perhaps many of us have become discouraged and embittered by all of the rising statistics on youth problems. But in response, we are in danger of prescribing the poison. In response to reports of alienated children and incompetent, disempowered adults, we are prescribing institutional solutions that will result in more familial disconnection, further eroding the typical parent's belief in his importance to his children.

I am also disturbed by what I see as using the worst-case scenario—the welfare, high-risk or inner-city child—as a wedge to develop social programs that are then prescribed, wholesale, for healthy, nonfat-risk families. The NICHD study is the latest example of data that shows the nonrisk and at-risk child benefits from different things.

For example, low-income, at-risk mothers had a positive effect in their involvement with their child if their child was in high-quality day care at 6 months. The opposite was found for nonrisk mothers.

This is the complexity to the day care question that should not be ignored. Society's failures should not become society's standards, particularly when we are talking about child care.

Put most simply, the image of a crack-addicted, negligent mother is no more the norm than June and Ward Cleaver types. These are extremes, and neither alone should drive policy. Not all parents need help, but there are two groups that do. One is the disadvantaged, hopeless children in forsaken schools with unwilling or incapable parents. This is a grave concern to all of us and demands action in the form of school revitalization, foster care reform, resource centers, quality day care, home visits and community-based parent education. We must not assume that mothers are any less central to these at-risk children.

A different concern is the crisis in middle-class and affluent, mainstream families, where child drug use, suicide and depression are also on the rise. These children live in the homes of potentially capable parents who have become convinced that hands-on parenting is not important, that professionals, day care and after-school programs are win-win propositions. Programs that further take children out of the parents' hands are the last thing that these parents need. Solutions for this group involve a cultural change of direction in public education. The information we have today underscores how irreplaceable parents are to children and how we need to underscore that in public education.

It is naive to fall back on the idea that no one will be forced to work or take their children to day care. Those who are free to choose will be "free" at a financial price, with little societal support or validation, in empty neighborhoods with few playmates for their children.

If we only support extended school and day care options, we make community webs to intervene with our children from day one the norm, eroding the support for healthy, autonomous families and communities that still exist throughout the country. We must not be afraid to publicly clarify the difference between the needs of at-risk families and the needs of healthy families.

It is hard to overemphasize how vulnerable families are today. A struggling gamily that finds one other family choosing to have an at-home parent, or one program that upholds the importance of the parent and family, can be profoundly influenced. We can forward our political or social agendas, but we need to ask ourselves, if such change would be a great loss to the many healthy communities and families, let us commit ourselves to protecting each parent's choice.

What is more beautiful than a mother whose heart is fully open to loving and nurturing her infant—a mother who is unembarrassed to love being a mother or staying at home with them. More of this for all children is my icon for the future—not a grim, underwritten, institutional reality, but an alive, real community of parents and families, unpaid and unspecialized, living and loving their children.

Thank you.

Senator COATS. Thank you.

[The prepared statement of Ms. Fisher follows:]

PREPARED STATEMENT OF DIANE FISHER

Thank you Senator Coats, committee and subcommittee members and guests for allowing me to speak on behalf of the parents and children who are potentially affected by the policy decisions we are struggling with today.

I am Dr. Diane Fisher, a practicing clinical psychologist, board member of Mothers at Home, a non-profit advocating for children and families, member and speaker for the Independent Women's Forum, and most importantly the mother of two school-aged boys and one almost two-year-old daughter. I am indeed in the trenches of child rearing, and walking the fine line between satisfying my own needs for professional stimulation and meaning and my deep belief that children need a parent at home. My belief is based on my experiences as a therapist and a parent. As a parent I believe it is critical to be a part of the environment that affects my children. And, as we now know, environment counts.

Lately, we've read reports that giving children high-quality day care is the equivalent of being at home with mom or dad. In reality, how much can "quality" of daycare accomplish? I feel sad for the mother who must drag the children into their car seats early each morning, often with a waffle in their hands, still in their blanket sleepers and little mermaid nighties, off to what often ends up to be a ten hour day at day-care. Is that parent able to be with her children in that special intimate joyful way children need, or must she rush from task to task to survive the day? These are parents that deeply love their children! And yet these children miss their mother's perspective on the world, her comments, her jokes, the mirror through which they learn who they are, a sense of family identity . . . irreplaceable stuff, not trivial, not superficial—but so devalued in our society! To say it would help if they were dropped off at a high quality center where a warm breakfast is waiting is perhaps missing the point. They still miss their mother.

Recent studies of the brain have underscored the critical importance of the environment and the child's irreplaceable ties to mother. As excited as we are about infant brain development, we must remember the emotional development of the infant forms the foundation upon which all later achievements are based. What does this mean? For the zero to three age group, it means time spent drilling with flash cards is time wasted. The infant's emotional security, the ability to feel safe and nurtured enough to begin to explore the world is what's important. For the infant, the mother Is the environment, pre-natally and post-natally. We are uncomfortable accepting this, but it is a biological fact; the infant is soothed by the mother's smell and voice. The warm mutual cocoon of security between the mother and the child allows and inspires the flowering of everything else in the child's personality. This is not an overstatement. Intellectual skills are more resilient and can be compensated for, emotional development is not so easy. An infant can recover from a deprived intellectual environment much easier than she can recover from emotional abandonment or neglect. It is the budding parent-child relationship we must protect.

Imagine a brilliant, stimulated, optimally educated child who is lacking in self-esteem, self-control, identity or discipline. This is, in fact, what is being reported in our schools today . . . privileged, indulged children who are wired to the Internet but without a moral compass or sense of connection to the adults in their lives. Unrealized genius is a cliche in our society, brilliant psychopaths, depressed prodigies. When we speak of critical windows of neural development and infant stimulation we must keep this perspective.

When we say "infant stimulation", what are we talking about? Black and white mobiles? Vowel sounds? Color? Specialized physical movements? No, we are basically talking about attachment, or the unscientific word, love. We worry about what children three and even younger should know and be able to do. Experiencing the everyday world on the arm of a loving parent is all the special stimulation and material that most babies need. The secure attachment of the infant to the mother is the critically important element for the child's overall development.

Attachment theory says parents and babies are biologically hard wired to form a close emotional tie—and this is not a quick 12 week maternity leave bonding thing—this is a slow gradual process of many seemingly trivial cues and responses that occur over the first year of life. The adult woos the baby and encourages the baby to interact and explore, primarily by intimately sensing the baby's needs and sensitively containing the child. Most of this is accomplished intuitively by the mother who is motivated by love and enjoyment of her offspring. This attachment is not something you can write a check for or schedule on a calendar to fit a time frame. Experts connect attachment failures with later addictive behavior, loss of resilience to later trauma, intimacy problems, school problems, depression, and delinquent behavior.

There are some misunderstandings about attachment; in a recent national Zero to Three survey, more than half of parents surveyed thought that the more caregivers a child is exposed to in the first three years, the better. In fact, attachment optimally occurs with a single person. Experts believe it is only after this secure relationship is firmly established (roughly in the middle of the first year) that baby is ready for secondary attachment figures. Multiple caregivers, a common phenomena in institutional care, is very destructive to the goals of this period. We are impatient with infant schedules in this fast goal oriented culture.

Certainly, parents benefit from help learning correct information about their infant's development. However, there is something elitist about the idea that we can't trust ordinary parents to successfully manage this early phase, or the idea that parents cannot possibly nurture the infant as well as trained professionals.An aggressive nationalized early childhood intervention program is not what most parents want or need. A counter argument I often hear is, "Parents aren't perfect, many are angry, depressed, disorganized or withdrawn with the child." In fact, just "being there" allows a child to learn about the parent and how to work out a long-term intimate relationship with that less-than-perfect parent without the underlying fear of being abandoned. That is the skill of true intimacy, not just the positive or goal-oriented interactions. It is that secure base, that hanging in there together for down time, confusion or "non-performing" time with the child that is most important of all.

Our culture has had a romantic almost wishful perspective on Parenting. We have wanted to believe in quality time, we have wanted to believe that no matter how many hours the parent is separated from the child, that parent will stay just as intimately engaged, just as knowledgeable and competent as if the parent had been with the child all day. We are seeing that this is just not true. We all saw the "no more worries, day-care is fine" headlines after the recent NICHD studies were released. This longitudinal study of children beginning at six months examines the effects of non-maternal care on mother and baby attachment and child cognitive development. Let's look at what this study said and did not say.

First of all, most of the relieved headlines focused on the part of the study that showed that children in high-quality day-care had cognitive and language skills better than those in low-quality. The data concerning emotional attachment were more concerning. The findings showed that for non-risk families, the more hours of day-care, the more the mother-baby relationship appears to be at risk of being adversely affected. Interestingly, it is a two way street, both the child AND the mother appear to become less engaged and responsive. Specifically, the mother's ability to sensitively respond to her infant at three years of age was affected by the amount of separation at six months. Similarly, the more hours of care baby was in the first six months, the less positively engaged the baby was at three years. The detrimental effects of mother-baby separation over time were also cumulative, the more total hours of separation, the less baby was positively engaged with mom at two and three years of age, while the mother was less sensitive (at 6 and 36 mos) and more negative (at 15 mos). If emotional development and attachment are critical, day-care is not the easy answer.

I have great respect for studies that attempt to grapple with these issues, but let me comment on what is not measured. Recently the first lady wrote that quality day care can produce the same quality three year old as a mother at home can— that, of course, depends on what we're looking at. Science cannot quantify important societal qualities such as courage, moral vision, compassion and character. And these traits, as we've discussed earlier, are inextricably linked with attachment and emotional development.

I think there are other reasons why it is so hard to see the truth. The child riding through the supermarket or helping with the laundry with the stay-at-home mother can hardly compete with media images of smiling reading circles, trained teachers and stimulating primary colored environments. It is easy to denigrate and trivialize the simple day to day mother-child world. Additionally, some of us are uncomfortable even using the word "mother" and prefer "caregiver", we believe focus on "mother" is oppressive and politically incorrect, we wish for parenting roles to be equal and the same. But children know, children do not forget their mothers or co-operate with politically expedient agendas.

A favorite argument is to say,"sure, more time with kids is best, but the days of staying at home are over." In fact, the majority of parents of young children work out arrangements that do not require both of them to work full time (APPENDIX A). A recent Independent Women's Forum post-election poll found that only 15 percent of all parents saw day-care that would allow both parents to work full-time as a solution. We are inundated with polls showing parents want more time with children, not more day-care. To say that day-care is the only viable economic reality or model for the future is just not valid.

Let us take a moment to focus more directly on the recent policy conversation. Despite the fact that the latest research confirms the importance of attachment . . . we are paradoxically calling for more and better nationalized day-care. Despite the specific findings of these studies, the new day-care and brain research is being presented as a springboard to persuade Americans of the need for higher taxes and new Federal programs. Mrs. Clinton is calling for a new entitlement—subsidies for working parents (versus for all parents). When day-care is presented not as an option, but as the model for the future, we have to ask ourselves, why? An aggressive nationalized system of early childhood intervention is not what most families want or need. Perhaps many of us have become discouraged and embittered by the avalanche of statistics on rising youth depression, drug use, violence, illegitimate motherhood, etc. But in response we are in danger of prescribing the poison. In response to reports of alienated children and incompetent disempowered adults we are prescribing institutional solutions that will result in more familial disconnection, further eroding the typical parent's sense of importance with his children.

I am disturbed by what I see as using the worst-case scenario, the welfare, high-risk, or inner-city child as a wedge to develop social programs that are then prescribed wholesale for healthy non at-risk families. The NICHD study is the latest example of data that shows the non-risk and at-risk child benefit from different things. For example, low-income mothers had higher positive involvement at 6 mos if children were in high quality day care, the opposite effect was found for non-risk mother (the more hours in care the less positively involved mother was at 6 mos).

This is a complexity to the day-care question that must not be dismissed merely because it is complex or politically uncomfortable. Put most simply, the images of inner city crack-addicted negligent mother are no more the norm than June and Ward Cleaver types, these are extremes and neither should drive policy. One issue is the needs of disadvantaged, hopeless children in forsaken schools, with unwilling or incapable parents. This is a grave concern to all of us and demands action, in the form of school revitalization, foster-care reform, resource centers, quality day-care, home-visits and community based parent education and resources. We must not assume that mothers are any less central to their children in these cases. A different concern is the crisis in middle-class and affluent mainstream families, where child drug use, suicide, depression and moral confusion are also on the rise. These children live in the homes of potentially capable parents who have become convinced that hands on parenting is not important, that professionals, day-care and after school programs are win-win propositions. Programs that further take children out of parents hands are the last thing these families need. Solutions for this group involve a cultural change of direction and public education. The information we have today underscores how important parents are—we need to begin to convey this strongly—parents are irreplaceable to children.

It is dangerously naive to fall back on the idea that no one will be forced to work or take their children to day-care. Those that are free to choose will be "free" at a financial price, with little societal support or validation, empty neighborhoods and few playmates for their children. If we only support extended school and day-care options, if we enthusiastically develop community webs to intervene with our children from day one, we will be eroding the support for the healthy community end family that still exist. The huge campaigns based on the needs of a small percentage of children in this country have an overarching effect on all families. We must not be afraid to publicly clarify this, healthy families (low-income or not) do not need the same services as dysfunctional families. It is hard to overemphasize how vulnerable families are today-a struggling family that finds one other family choosing to have an at-home parent, or one program that up-holds the importance of the parent and family, can be profoundly influenced. We can forward our political and social agendas by only supporting extended schools and bigger and better day care. However, if we know in our hearts that such change would be a great loss to the many communities and families still doing a great job today—then let us each commit ourselves to protecting each parent's choice, by supporting more significant family leave and workplace reform, tax breaks and public education aimed at assisting young families in raising their own children.

We must personalize rather than exempt ourselves from this discussion; think about the type of communities you admire, think about what you want for your own children. This must be the model we use of our touchpoint . . . not an unrealistic Stepford wife or Ozzie and Harriet image, but a vital alive growing community. A community weaving together our modern ideas about women and men, our wish for a more egalitarian society, and the unavoidable truth of how children need their parents. What is more beautiful than a mother whose heart is fully open to love and nurture her helpless infant . . . a mother who is not hesitant, distancing or sealing herself off because separation is weeks away, a mother unembarrassed to love being a mother, a mother supported by her family and her culture. More of this for all children is my icon for the future. Not a grim, underwritten, institutional reality, but an alive, real community of parents and families, unpaid and unspecialized, living and loving their children.

APPENDIX A

According to the Statistical Abstract of the U.S. for 1996, fewer than half of mothers with kids under 6 are currently employed and only about a third of mothers with young kids work as much as 35 hours a week. 33 percent of the children whose mothers do work full-time are cared for by a relative. The Census Bureau 1994 stats showed that non-employed mothers care for 47 percent or 9.1 million of all preschool children. This figure rises to 61 percent if tag teaming (10 percent) and home businesses (4 percent) are added in. This same report shows that non-employed mothers care for 39 percent of children ages 5–14, or 23.4 million of the country's 56.1 million children (und22er age 15). If we include the women listed under Department of Labor statistics as employed who are actually working part-time, at-home, or as little as one week a year, the statistics are even larger. The Census Bureau shows that two-thirds (66.7 percent or 4.503 million) of mothers with children below age six are either at-home or employed part-time. In all, 16.6 million (of 26.4 million) married couple families (or 62.9 percent) with children under age 18 have a non-wage earning mother at home or a mother employed part-time.

FURTHER READING:

The Assault on Parenthood: How Our Culture Undermines the Family, (1997) Dana Mack (Simon and Schuster).

Being There: The Benefits of a Stay-at-Home Parent (1996) Isabelle Fox, with Norman Lobsenz (Barron's).

Children First: What Society Must Do—and Is Not Doing—for Children Today (1994) Penelope Leach (Vintage Press).

When the Bough Breaks: the Cost of Neglecting Our Children (1992) Sylvia An Hewlett (HarperCollins).

Childhood's Future (1990) Richard Louv (Anchor Books).

Key Findings From a Nationwide Survey among Parents of Zero- to Three-year-olds, Zero to Three National Center for Infants, Toddlers and Families, April 1997.

Senator COATS. Carlie Dixon.

Ms. DIXON. Thank you very much for the opportunity, Mr. Chairman, and other members, for presenting my views.

I am a full-time mother and supporter of mothers spending more time at home with their children.

Before I begin my remarks, I would just like to encourage you to think about—whatever policies you all adopt—what is the goal? And it strikes me that the goal is civilized, productive and moral citizens. So whatever path we go down, I think we need to keep our eye on the birdie.

You are pondering today what, if any, are the Federal policy implications of this emerging research on how infants' and young children's brains develop. As recently as 15 years ago, neuroscientists believed that babies' brains were genetically programmed, and now we know differently. Just a casual observation did not lead us to believe that we were wrong, but now we have learned that this period of brain development is more directly impacted by experience and environment than we had previously understood.

So what kind of environment enhances this process? We are told by the experts that it is one made up of simple things like a soothing cadence of fairy tales, the harmonies of lullabies, the action of blocks, games like peek-a-boo or cooing, cuddling, giggling, nursing, lots of talk and verbal interaction. In short, it is a myriad of loving, sensitive human responses and interactions with a baby or a young child that gives the child a meaningful and emotional context to process the world around her.

For instance, at a White House conference recently on early childhood development, one brain research scientist explained that the kind of cooing that parents engage in with their children is the perfect language for babies, because it attracts babies' attention with its melody and warmth. In response to that comment, it was asked, well, how much must a parent coo? Why not just turn on the radio? The scientist replied that the radio would not facilitate speech development because there was no exchange, no ability to communicate, no way to put things in context.

It was also noted by another scientist at this conference that scientific developments are confirming what grandma always knew—children need devoted care from those who love them. Ordinary parents responding to their children with ordinary parental love provide them the optimum environment needed for normal brain development.

Not only did grandma always know this, but those of us in the at-home mothering community, who have spent thousands of hours in the day in and day out intimacy of mothering infants and young children, have experienced and learned the truth of this scientific knowledge firsthand. When I was deciding whether or not to return to work after my son was born nearly 10 years ago, it was experienced mothers who were whispering in my ear and telling me, the first years of life are so important, your son needs you more than your office does. Frankly, hearing this over and over from so many mothers had a large influence on my decision, in addition to having fallen in love with my baby. One mother, who was also a colleague with grown children, even urged me to stay at home for the first 10 years—not to worry, the bar would welcome me back later. Believe me, in 1987 in the female legal community, this was close to heresy.

In addition to the whispers of mothers, I also read as much child development literature as I could and was persuaded by what was known in the literature even 10 years ago, that I was the best person to be raising my child, despite my trepidation about leaving my career and becoming a homemaker.

So, here I am 10 years later, whispering the same truths in your ears. You are willing to listen because our scientists are now telling us how crucial these first 3 years of life are. Mothers who provide the primary care for their babies can testify to the complexity of what is really going on, and the depth and intimacy of a relationship with a baby or young child that is not obvious to the casual observer. The trust and intimacy that grow out of large quantities of times with mother are tools for a lifetime.

This research is calling us to take this period of life much more seriously than we have in the past. It is calling us to examine the environment in which our children begin their lives with more discernment. It is calling us to be better informed when we make choices about how we spend our time as parents during this crucial time. It is calling us to keep doing what loving parents do because it appears that we were wired to respond to our babies and youngsters in ways that are just right for their development.

But what does it mean in terms of Federal policy? I think one could take this body of research and reasonably conclude that Federal policy should at least not stand in the way of parents being good, loving parents. And in this early period, it should help maximize the amount of time mom and dad can spend with their children. At present, only 50 percent of children under age one are cared for primarily by their parents. By age 3, that percentage drops to 40 percent. Since 1965, the amount of time parents have spent with their children has dropped 40 percent.

Are there changes you could make to improve these statistics? I believe there are, and I believe you would have the strong backing of your constituents should you choose to do so.

Countless polls confirm that a majority of parents believe it is better for children to have a parent at home, and that these parents would spend more time at home if family economics would permit. Please review the results of these polls in my attachments. These parents are the ones who have sacrificed all they can and still determine that they need the only parent or both parents to be working full-time outside the home in order to provide for basic needs for the family. This group of parents contains the mothers who weep after they have dropped their children at day care because they must go to work to put food on the table.

How do I know this? Through my work with support groups for mothers transitioning from work to home, I have had literally hundreds of conversations over the past 10 years with mothers who are desperate to be with their babies and young children and did not think they had any economic alternatives. More distressingly, some were afraid of leaving the job market, fearing problems with reentry years later. The concerns of these mothers are matters that can clearly be addressed by more mother-friendly, Federal policies in the tax and labor area. These mothers need your help. Please help them.

In addition, there is another smaller but growing group of parents who have been able to creatively organize their lives, often making significant financial and career sacrifices so that they are the primary caretakers of their children. Surprisingly, a majority of these families are middle-class. Nineteen ninety-three Census Bureau data reveals that the median income of families with a mother at home is only $35,000. Parenthetically, the median income of families with both parents working is $50,000. This growing group of parents are the pioneers in our economy who have sought alternative ways of working to maximize their time at home—by tag-team parenting, telecommuting, starting home-based businesses, including being a home day care provider, arranging with employers to work part-time or job-share or have flextime, taking time out of their careers while their children are young, or only working during school hours. These parents often do not see the Government, our Tax Code, our labor policies or our culture as being supportive of their sacrifices or choices. They view themselves as the new counterculture. They would deeply appreciate and be pleasantly surprised if Government policies were more supportive of their struggling efforts to spend more time at home.

Unfortunately, current Federal policy does not appear to be concerned with more parental time with children in general, nor specifically during these early years. Rather, current Federal policy exacerbates conditions requiring two parents to work and encourages and subsidizes nonparental care.

Let us look at Federal tax policy. As I mentioned earlier, the tax burden on families, including Social Security and Medicare taxes, has become so onerous as to require two incomes to meet living costs for many families. The tax burden on families between 1960 and 1984 increased 43 percent for a married couple with two children and 223 percent for a married couple with four children. This tax burden is worse today due to the reintroduction of the marriage penalty in 1993.

Remarkably, the tax burden for singles has remained the same since the 1950's. One could argue that the welfare State has been borne by America's families, and now, as we are beginning to break up and trim down the welfare State, let us also begin to unburden these families who have paid the taxes to support it.

What is the most powerful, helpful and morally correct thing that you could do to change policy in this area? I believe it is changing the dependent exemption. The original legislative intent was not to tax families on income used for food, clothing and shelter for dependents. Hence, there was a generous system of personal exemptions for dependents. In 1948, the personal exemption of $600 per dependent equalled 42 percent of family income. However, since the late 1940's, the personal exemption rates have not kept up with inflation or living costs, and if properly adjusted today would be over $8,000 per dependent, rather than a mere $2,000 per dependent. Imagine the difference in tax burden to a typical lower- or middle-income family with two, three or four children if the dependent deduction were raised to even $5,000 or $6,000 per dependent. You could even target a raised dependent exemption solely for the period during which a taxpayer had children under 3 years of age. At that level, the Federal Government would not be taxing the true cost of feeding, clothing and sheltering our Nation's children. And it is likely that both parents would not have to work full-time to provide for basic family needs. This would be a lot cheaper than the $100 billion in costs mentioned earlier for universal, high-quality day care.

Please note that the $500 tax credit per child in the current budget plan does not adequately address this issue. It will help buy soccer shoes for some families and groceries for other families, but it does not make the difference for more time with children. Hopefully, as you consider the progressive tax rate system and move to a flat tax or a consumption tax, you will do what is right and stop taxing income used for basic survival needs.

On a smaller, less global scale, the current Tax Code contains a big thorn in the side of those who sacrifice income to take care of their own children. That is the dependent child care tax credit. Why is this tax credit available only to those who pay others, excluding grandma and Aunt Susie, to take care of their children, and not to those who forego income in order to take care of their own children? Are not these parents in the same position economically?

Senator COATS. Carlie, if I could just interrupt. We are running into a real time problem here. Is it possible for you to summarize the remainder of your statement so we can get to the questions? Otherwise, we are not going to get to the questions.

Ms. DIXON. Yes. OK, I am happy to do that.

Essentially, I am suggesting for the dependent child care tax credit that it be universal for all parents who have small children, who either have day care tuition or forego income.

Second, I just want to call your attention to a number of bills that are in Congress right now that can help people with home-based businesses and people who are trying to be telecommuters—S.460, the Home-Based Business Fairness Act, and S.473, the Independent Contractor Tax Simplification Act. There are a number of provisions in my comments that relate to home-based businesses and telecommuting employees that you need to address in addition.

Finally, in terms of Federal labor policies, there are just three I would like to suggest. One, at present, you all are looking at, S. 4, the Family Friendly Workplace Act, and I would encourage you to pass that, giving voluntary compensation time—compensatory time off—instead of overtime pay and flextime benefits that are already available to public employees. This would be the answer to a prayer for many families.

I would encourage you to consider reintroducing Senator Hatch's bill from the early 1990's, that would give the equivalence of a "veteran's preference" to parents who have taken time out from the job market and want to reapply for their old jobs.

I would suggest that the Family and Medical Leave Act being changed to go only up to 6 months misses the key period of attachment, which commences at 6 months, as I understand it, and really goes through the period of 30 months. That would miss the mark.

If you go one step further, you could prohibit employers from discriminating against applicants who have gaps in their resumes because they have been caring for small children, just as employers are prohibited from discriminating against women who are pregnant. I submit that the postnatal phase is just as important as the prenatal phase.

So there is lots that you can do, I think. In order to have a good society, we have to make it easy to be good, not hard to be good. So let us make it easier for parents to be parents.

Thank you very much.

Senator COATS. Thank you. We will include your full statement in the record. There are a number of helpful suggestions there.

[The prepared statement of Ms. Dixon follows:]

PREPARED STATEMENT OF CARLIE SORENSEN DIXON

INTRODUCTION:

Thank you for the opportunity to present my views to your committee today on the policy implications of the recent "pre to three" brain research from the perspective of a full time mother and a supporter of mothers spending more time with their children.

I am the mother of three boys ages nine, five, and four, and have been retired from practicing tax law since the birth of my first son. For nearly ten years preceding my retirement, I practiced tax law in the private sector here in Washington. I resigned my partnership position in 1988 after nearly a year of maternity leave to become a full time mother. Since that time I have helped found two organizations to provide support to mothers interrupting their careers to be at home with their children: Mothers First, which is based in Northern Virginia, has served over 1,000 mothers since its inception in 1988; and the Lawyers at Home Forum of the Women's Bar of the District of Columbia, has also served hundreds of women lawyers stepping off the full time career track to spend more time with their children at home. I have been ad continue to be, a active advocate for at-home mothers in the media ad in various forums in our local ad national community.

RECENT PRE TO THREE BRAIN RESEARCH:

You are pondering today, what, if any, are the Federal policy implications of the emerging research on how infants' and young children's brains develop. As recently as 15 years ago, neuroscientists believed that babies' brains were genetically programmed to develop in a predetermined way after birth. An uninvolved or casual observer of babies would not have suspected that this view was erroneous. From a outside observer's point of view, babies appear to do a lot of sleeping, eating and staring. As they emerge from babyhood, they all follow a pattern of sitting, crawling, and walking. And, most can communicate quite well in their native tongue by age three. Except for disabled or retarded children, all children appear to grow and develop fairly uniformly regardless of setting.

Now, however, neuroscientists are telling us they have learned that this period of brain development is more directly impacted by the child's experience and environmnent than had been previously documented or understood. The structure a child's brain will eventually assume is created in large part by how external stimulation in the child's environment impacts on the creation of neural connections called synapses. This external stimulation affects the quality and quantity of the synapses created, which in turn have a direct impact on a child's cognitive, motor, language and emotional development. I refer you to the PET scans of the brains of a healthy normal child and an abused and deprived child in Newsweek's Special Edition on "Your Child from Birth to Three" (See Attachment One).

What kind of a environment enhances the process of normal brain development? We are told by the experts that it is one made up of simple things like the soothing cadence of fairy tales, the harmonics of lullabies, the action of blocks, games like peekaboo, cooing or "parentese" as it is sometimes called, cuddling, giggling, nursing, lots of talking and verbal interaction. In short, it is a myriad of loving, sensitive, human responses and interactions with a baby or young child that gives the child a meaningful and emotional context in which to process the world around him. For instance, at the White House's recent Conference on Early Childhood Development, one of the brain research scientists explained that the kind of cooing that parents engage in with their children is the perfect language for babies because it attracts babies' attention with its melody and warmth.

In response to that comment, it was asked how much must a parent coo to its child, why not just turn on the radio? The scientist replied that the radio would not facilitate speech development because there is no exchange, no ability to communicate or to put things in context. It was also noted by another brain research scientist at the White House conference that these scientific developments are conforming *what Grandma always knew*, that children need devoted care from those who love them. Ordinary parents responding to their children with ordinary parental love provide them the optimum environment needed for normal brain development.

Not only did Gradma always know this, but those of us in the at-home mothering community who have spent thousands of hours in the day in and day out intimacy of mothering infants and young children, have experienced and learned the truth of this new scientific knowledge first hand. When I was deciding whether or not to return to work alter my son was born nearly ten years ago, it was experienced mothers who were whispering in my ear and telling me, "the first years of life are so important. Your son needs you more than your office does." Frankly, hearing this over and over from so may mothers had a large influence on my decision. One mother, who was also a colleague with grown children, even urged me to stay home for the first ten years and not to worry, the bar would welcome me back later! Believe me, in 1987 in the female legal community, this was close to heresy. In addition to the whispers of mothers, I also read as much child development literature as I could, and was persuaded by what was known in the literature, even ten years ago, that I was the best person to be raising my child, despite my trepidations about leaving my career and becoming a homemaker.

So here I am ten years later whispering the same truths in your ears. You are willing to listen because our scientists are also now telling us how crucial the first three years of life are. Mothers who provide the primary care for their babies can testify to the complexity of what's really happening and the depth and intimacy of a relationship with a baby or young child, beyond its custodial needs, as an extraordinary experience that is not obvious to the casual observer. The trust and intimacy that grow out of large quantities of time with one's mother are tools for a lifetime.

BUT WHAT DOES IT MEAN?

This research is calling us to take this period of life much more seriously than we have in the past. It is calling us to examine the environment in which our children begin their life with more discernment. It is calling us to be better informed when making choices as to how we spend our time as parents during this crucial period of our children's lives. And it is calling us to keep doing what loving parents do because it appears that we were wired to respond to our babies and youngsters in ways that are just right for their development. But what does it mean in terms of Federal policy?

I believe one could take this body of research and reasonably conclude that Federal policy should at least not stand in the way of parents being good loving parents ad in this early period of life, it should help maximize the amount of time parents can spend with their children. At present, only 50 percent of children under the age of one are cared for primarily by their parents, and by age three that percentage drops to 40 percent. The amount of time parents spend with their children today has dropped 40 percent since 1965. Are there changes in Federal policy that could improve these statistics? I believe there are and I believe you would have the strong backing of your constituents should you choose to do so.

WHAT DO PARENTS WANT?

Countless polls confirm that: (1) a majority of parents believe that it is better for children to have one parent at home, and (2) that parents would spend more time with their children and have one parent at home, if family economics would permit. Listen to the results of a few of these polls. (See Attachment Two).

These are the parents who have sacrificed materially all they can and still determine that they need the only parent or both parents to be working full time outside the home in order to provide for basic needs of the family. This group of parents contains the mothers who weep alter they have dropped their children at day care because they must go to work to put food on the table. How do I know?

Through my work with support groups for mothers transitioning from work to home, I have had literally hundreds of conversations over the past ten years with mothers who were desperate to be with their babies and young children, and did not think they had any economic alternatives. More distressingly, some were afraid of leaving the job market fearing problems with reentry. The concerns of these mothers are matters which can clearly be addressed by more mother friendly Federal tax and labor policies. These mothers need your help! Please help them!

In addition, there is another smaller, but growing group of parents who have been able to creatively organize their lives, often making significant financial and career sacrifices, so that they are the primary caretakers of their children. Surprisingly, a majority of these families are middle class. 1993 Census Bureau data reveals that the media income of married couples with children where the father is employed and the mother is at home is only $35,876 (parenthetically, the median income of married couples with children where both parents work is $15,000 more!). (See Attachment Three.) This group of parents are the pioneers in our economy who have sought alternative ways of working to maximize their time at home by tag-team parenting, telecommuting, starting home-based businesses including being a home day care provider, arranging with employers to work parttime or to jobshare, taking time out from their careers while their children are young, or working only during school hours. These parents often do not see the government, our tax code, our labor policies or our culture as being supportive of their sacrifices or choices. They view themselves as the new counterculture and would be deeply appreciative and pleasantly surprised if government policies were more supportive of their struggling movement to start their lives out of the workplace for this season in their lives when their children need them most.

In light of our enhanced understanding of the early years of life, should not Federal policy, if possible, support these parents in their efforts and desires to spend more time with their children?

Unfortunately, current Federal policy does not appear to be concerned with more parental time with children in general, nor specifically during these early years of life. Rather current Federal policy exacerbates conditions requiring two parents to work and encourages and subsidizes non-parental care.

FEDERAL TAX POLICY:

Let's look at our Federal tax policies first. The tax burden on families, including social security and Medicare taxes, has become so onerous so as to require two incomes to meet living costs for many families. The tax burden on families between 1960 ad 1984 increased 43 percent for a married couple with two children and 223 percent for a married couple with four children. This tax burden is worse today since the marriage penalty was reintroduced in 1993. Remarkably, the tax burden for singles has remained the same since the 1950's. One could argue that the cost of the welfare state has been borne by America's families. A more detailed history of Federal tax policy and how it impacts the family is the subject of a recent speech by Allan Carlson of the Rockford Institute. (See Attachment Four). As we are now beginning to break up and trim down the welfare state, let us also begin to unburden the families who have paid the taxes to support it.

What is the most powerful, helpful and morally correct change in policy you could make? Let's take a look at the exemption for dependents. The original legislative intent of the income tax was NOT to tax families on income used to provide food, clothing and shelter to dependents. Hence there was a generous system of personal exemptions for dependents. In 1948, the personal exemption of $600 per dependent equalled 42 percent of family per capita income. However, since the late 1940's, the personal exemption rates have not kept pace with inflation, and if properly adjusted, today would be over $8,000 per dependent, rather than a mere $2,000 per dependent. Imagine the difference in tax burden to a typical lower or middle income family with 2, 3 or 4 children if the dependent deduction were raised to even $5,000 or $6,000 per dependent. You could even target a raised dependent exemption solely for the period during which a taxpayer had children under three years of age. At that level, the Federal Government would not be taxing the true cost of feeding, clothing and sheltering our Nation's children, which is the morally right policy, and it is likely that both parents would not have to work full time to provide for basic family needs.

The $500 tax credit per child in the current budget plan does not adequately address this issue. It will help buy soccer shoes for some families and groceries for other families, but it doesn't make the difference for more time with children. Hopefully, as you consider rethinking the progressive rate system and move to a flat tax or consumption tax, you can do what is right and stop taxing income used for basic survival needs for families!

On a smaller, less global scale, the current tax code contains a big thorn in the side of those who sacrifice income to care for their own children, that is the dependent child care tax credit. Why is this tax credit available only to those who pay others (excluding Grandma and Aunt Susie) to take care of their children and not to those who forego income in order to take care of their own children? Are they not economically in the same position?

In fact, in 1988, 77 percent of the benefits of this tax credit went to families with annual incomes in excess of $30,000, and 43 percent went to families with incomes in excess of $50,000. Remember, the media income of families with one parent at home is $35,000. Why are these parents not worthy to receive the child care tax credit? This provision is discriminatory, unfair and discourages parental care. Why not amend the child care tax credit so that it treats all parents the same who have child care expenses in the form of day care tuition or foregone income, by allowing a child care tax credit to both groups of parents. Again, you could target this tax credit to all families with children three years of age or under. This would allow many of those families who needed both parents to work to have one parent provide part or all of the family's child care needs.

In addition, there are several steps you could take to make the tax code more friendly and in some cases less, discriminatory toward telecommuters and home-based businesses. There are bills currently pending in this Congress that, if passed, would greatly help these parents be spend more time at home, including the following:

S. 460—The Home-Based Business Fairness Act which would allow deduction of home-based office expenses even if revenues are generated elsewhere for parents who, for example, work as free-lance nurses or contractors.

S. 473—The Independent Contractor Tax Simplification Act will help simplify the determination of whether a home-based worker is an independent contractor or an employee. This is an area where again the social trends are far ahead of our tax code and the old complicated rules have caused unnecessary burdens on honest taxpayers trying to spend more time at home.

In addition, there are several other ways in which the current Code is unfriendly to home-based business and telecommuters which need reform:

1. Taxpayers with home-based businesses must use space exclusively for business purposes unless they are a home day-care provider. This rule prevents an office in the corner of the family room or dining room in order that parents can easily be accessible to and monitor small children. The Code needs to be amended to contain a second "mixed use" exception to the "exclusive use" rule for taxpayers conducting business at home while caring for dependents. Again, this can be targeted for parents with children under school age.

2. Current "allocation of space" rules for the permitted" mixed use" case of home day care providers allocate the space used for day care and family needs as personal space in the sleeping hours, thus reducing legitimate deductions related to rent, de-

preciation and utilities, while expenses related to unused space during the sleeping hours in comparable commercial space are deductible. This is a rule that discriminates and burdens the home day care provider.

3. In the case of telecommuting employees, no deductions are allowed for home-based business expenses unless such expenses, along with certain other expenses exceed 2 percent of the taxpayer's adjusted gross income, and then only the excess above 2 percent is deductible. This rule essentially eliminates any deductions for expenses for most telecommuting employees.

Finally, it seems strange that our tax Code allows us to engage in tax-deferred savings for the later years in life but not for the expenses of the early years of a family's life. So many women I have talked to wish they had planed better financially for this season of their lives, not expecting to fall so deeply in love with their infants and not appreciating how important it would be to forego income and be with their children. Encouraging and deferring taxation on savings for this crucial period of life would be a meaningful and helpful change.

FEDERAL LABOR POLICY:

In addition, there are clear steps to be taken to reform labor policies to permit and encourage parents to organize their work lives with more time at home. Again, you can target these policies to parents with young children.

At present, S. 4 the Family Friendly Workplace Act is pending in Congress to allow private employers to offer the same flextime benefits already available to public employees, and further provide for voluntary compensatory time off instead of overtime pay. Despite the concerns of labor unions, this is a bill that will be an answer to prayers for millions of parents and will bring our labor laws of the 1930's up to date with the economy of the 1990's.

Additionally, you should consider reintroducing Senator Hatch's bill from the early 1990's that would give the equivalence of a "veteran's preference" to parents who leave the job market to care for young children and wish to reapply for their old job. Helping parents spend this relatively short season in their working lives with their children will have enormous benefits to children and the nation. Why not make it easier for these parents to reenter the job market after a few years of sacrifice for their families?

You could even go one step further and prohibit employers from discriminating against applicants who have gaps in their resumes because they were caring for small children, just as employers are prohibited from discriminating against women who are pregnant. Isn't the post-natal phase just as important or more important than the pre-natal phase? These kinds of labor policies would help alleviate the fears of may mothers over job discrimination upon reentering the work force alter taking care of their young children, and they would be a powerful show of support to families willing to make the sacrifices necessary to care for their own children.

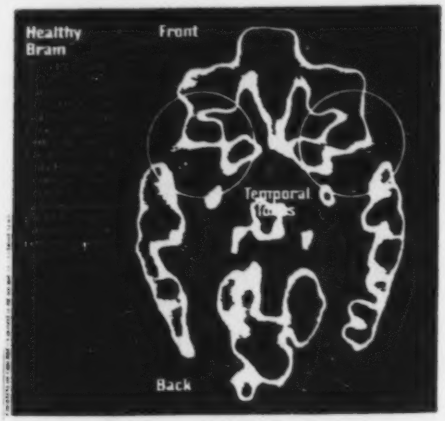
CONCLUSION:

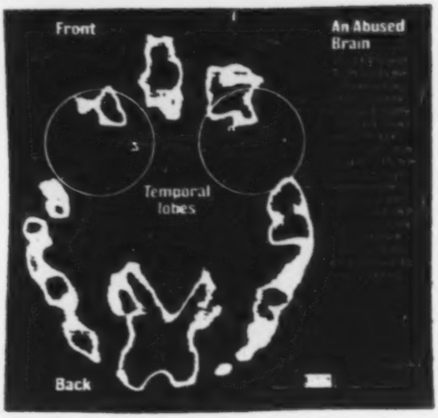
As you can see, there is much you can do to help parents in these early years of childrearing. In order to have a good society, we need to make it easy, not hard, to be good. So let's make it easier for parents to be parents.

ATTACHMENT ONE

June 5, 1997 Testimony for Senate Subcommittee on Children and Families

Photographs from Newsweek's Special Edition on Your Child from Birth to Three, Spring/Summer 1997, pages 30 and 31





ATTACHMENT TWO

List of Poll Data for June 5, 1997 Testimony for Senate Subcommittee on Children and Families

(1) A 1989 Washington Post poll of Washington area parents found 62% of working mothers said they would be home full time if they could afford it.

(2) A 1987 Family Circle Magazine survey of 50,000 women found 67% said if it were possible, they would quit their job to stay home with their children.

(3) A 1988 Public Opinion survey found that 88% of mothers polled who worked full or part time said if they could afford it, they would rather be home with their children.

(4) A 1988 USA Today poll of two working-parent families found 73% would have one parent stay home full time if money was not an issue.

(5) A 1990 Los Angeles Times poll found 56% of parents feel guilty spending too little time with their children.

(6) A 1989 New York Times poll found 83% of working mothers and 72% of working fathers say they are torn by conflict between their jobs and the desire to spend more time with their families.

(7) A 1989 Washington Post/ABC poll found 80% of parents believe it is better for young children to be cared for by a parent at home.

(8) A 1989 Cornall University study found that 67% of full time working mothers would like to work fewer hours so they could devote more time to their families.

(9) An early 1990's Roper Poll found 60% of children with working mothers would prefer they stay home as opposed to 40% five years previously.

(10) A 1993 study cited in the Background Information for S. 4, The Family Friendly Workplace Act, found that 66% of adults surveyed nationwide wanted more time with their children.

ATTACHMENT THREE
June 5, 1997 Testimony for Senate Subcommittee on Children and Families

Reprint from October 1995 issue of *Welcome Home* published by Mothers at Home
Vienna, Virginia

Public Policy Update

Reprinted from October 1995 issue
of *Welcome Home*®

Is Homemaking An Affordable Choice?

by Betty E. Walter

At a social event a few months ago, I chatted with the spouse of one of my husband's co-workers. Upon learning that I was a homemaker, the man responded, "Aren't you lucky! So few women today can afford to be at home." Caught off guard by his reaction, I smiled but said nothing.

The next day, I felt annoyed that I'd missed an opportunity to set the record straight. I told some fellow homemakers about what had happened, and learned that my experience was hardly unique. To many people, "homemaker" is equated with vast wealth and husbands in high-paying and prestigious jobs. The popular press frequently reinforces this idea.

In the early 1990s, the media "discovered" that many women were leaving professional careers for home. This resulted in a flood of articles which characterized homemakers as "power moms" and the choice to be at home as a status symbol of the 1990s. A 1993 *Wall Street Journal* article[1] helped to solidify this perception and continues to be referenced by numerous social and lifestyle commentaries appearing in the popular press.

Statistics, however, point to an undeniable truth: *the typical American family with a full-time mother at home is middle-income.* Data from the Census Bureau's Current Population Survey for 1993 reveal that the median income of married couple families with children, an employed father and a mother at home is about *$15,000* less than married couple families with children where both the father and mother are employed.[2] Data from the same survey also shows that the 1993 median earnings of a father in both types of families were nearly the same.[3]

At first blush, it appears that great economic sacrifices are required of a family with a mother at home. After all, $15,000 for the typical American family is a lot of money. One only need pick up the paper for accounts of how difficult it is for families to live on one income. A June 4, 1995 *Boston Sunday Globe* story is typical: "The economics of raising a family has not been kind to the middle class in the past 20 years. Housing prices and stagnating incomes are two reasons parents today feel barely able to provide on two salaries what their own parents provided with mom at home full-time."

But, are the costs of having a mother at home formidable? Consider a mother who provides $15,000 per year or $1,250 per month in income to her family. Aside from the obvious child care expenses ($400-600 per month),[4] families with both parents employed face commuting and parking expenses ($50-$100 per month), higher federal, state, and local taxes (30%-34% or $375-$425 per month), the costs of purchasing and maintaining a wardrobe of work clothes ($50-$75 per month), transportation for the child ($10-$20 per month), and convenience foods and meals out for lunch and dinner ($20-$30 per month). In this example, these work-related expenses leave between zero and $345 extra per month, hardly a great economic bonanza!

Clearly, every family has different economic factors to consider. A generous relative may provide alternate child care at little or no expense. In some families, the mother's income may be so great that work-related expenses are a very small percentage of her take home pay, or her paycheck may provide needed security in families with a self-employed father. In other families, the second income a mother provides may be needed because the husband's earnings are very low and every extra dollar counts. And,

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[1] "Status Symbols: Stay-at-home moms are fashionable again in many communities," by Alecia Swasy, *Wall Street Journal*, 7/23/93.

[2] The median income of married couple families with children, an employed father, and a mother at home is $35,876. The median income of married couple families with children and an employed mother and father is $50,621.

[3] The 1993 median earnings of a father with a non-employed wife was $31,540, and the median earnings of a father with an employed wife was $31,099, a difference of $441.

[4] These estimates are based on reports Mothers At Home has received from mothers across the country and reflect costs faced by a two-parent, one-child family. Some costs would likely increase with the number of children. In addition, these estimates may vary widely depending on a family's place of residence.

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ATTACHMENT FOUR

June 5, 1997 Testimony for Senate Subcommittee on Children and Families

Speech given by Allan Carlson of the
Rockford Institute
Rockford, Illinois
September 20, 1995 to
The National Parenting Association

WHERE ARE YOUR PARENTS, KID?
WORKING! SOMEONE HAS TO PAY FOR ALL THIS!
THE AMERICAN
FAMILY

Cartoon from Commentary section of The Washington Times on May 10, 1997

TAXES AND THE FAMILY

by Allan Carlson

For a Session Sponsored by The National Parenting Association
New York, NY
September 20, 1996

While high levels of taxation have been common for most of this century, relatively little attention has focused on the influence of taxes on family behavior. Instead, decisions regarding marriage, divorce, and the birth and spacing of children have usually been viewed as exogenous to fiscal policy.

Gary Becker's seminal work on the economics of an individual's use of time<1> opened the way for a fresh understanding of choices regarding marriage and fertility.<2> This new approach, often called *the new home economics*, soon generated theoretical attempts to identify the specific effects of taxation on family behavior.<3> Actual effects have also been measured. For example, recent work led by Leslie Whittington has shown a "robust," almost stunning relationship between fertility and the real value of the *personal exemption* provided by the U.S. income tax code. Where earlier researchers dismissed the personal exemption as too insubstantial to have any fertility effects, Whittington calculated that its value (in 1982-83) ranged between 4 and 14 percent of the annual estimated cost of raising a child, a figure she labelled significant. Moreover, it is ongoing in nature, and would be available each year a child could be claimed as a dependent, increasing its perceived value. In one investigation, using Panel Study on Income Dynamics

(P.S.I.D.) data for 1979-1983, Whittington found an elasticity of birth probability with respect to the exemption of between .339 and 1.31. Using just the lower figure, this would mean that a 1 percent increase in the exemption value would cause a .339 percent increase in birth probability. Translated into dollars and people, this figure suggested that a mere $30 increase in the value of the exemption would increase overall U.S. fertility by 8 percent, or 312,000 *additional* births in 1988! This study also showed that the value of the exemption positively influenced not only the timing of births, but completed family size as well.<4> Another investigation found that this strong positive relationship between the value of the exemption and fertility held remarkably firm for the whole 1913-1984 period.<5>

In this paper, I will review the treatment accorded the family by U.S. federal tax policy since 1944, and its effects. In order to judge the latter, however, one need have an operational definition of "family." Mine, resting on historical, anthropological, and biological precepts, is: "A family is a man and a woman bonded in a socially-approved covenant of marriage, to bear, raise, and protect children, to provide mutual protection and support, to create a small domestic economy, and to maintain continuity with the generations which came before and which shall come in the future."<6>

MEASURES OF FAMILY HEALTH

While this definition allows for a number of possible measures of family health and decline (including abuse statistics and scales of intergenerational contact), I will focus in particular on three:

1) *Encouragement to stable marriage*. At best, a tax system should deliver a positive economic incentive to marriage, as the foundation of social

order, the first community. A good system would also embrace a direct or indirect financial penalty on divorce. At the very least, a tax code should never provide an individual with an incentive to avoid marriage, cohabit outside of wedlock, or seek a divorce.

2) Encouragement to the birth of children. In an era where every modern nation has either a zero-growth or (more commonly) a negative total fertility rate, the birth of additional children should be welcomed and encouraged by a tax system. Some would justify this instead as a logical extension of the "ability to pay" criteria for taxation. Others would view this as setting a minimum level of household existence, before taxation sets in. Family advocates of a more social democratic bent might argue for this as a means of redistributing income across one's lifespan: the "tax relief" granted when one raises children is compensated for by the payment of higher taxes both before and after the children are present.

I would emphasize two more justifications. First, tax preferences for dependent children--be they exemptions, deductions, or credits--are the least intrusive way to adjust income in compensation for the "market failure" regarding children. Competitive wage markets simply pay no attention to the number of dependents a worker might have. While many nations have adopted state child allowances as a response, these tend to draw governments into family life, welfare, and decision making. In contrast, universal tax exemptions, deductions, or credits require no investigations, means-testing, or payment schemes, beyond proof of a child's existence. In short, they have the same potential beneficial effects of child allowances, without the consequence of excessive state intrusion.

Second, families deserve targetted tax relief as partial compensation for the state's prior socialization of their children. This began in the 19th century with the imposition of mandatory school attendance laws, which took from parents control over their children's time and training, and transferred it to the states. Early in this century, child labor laws, culminating in the Fair Labor Standards Act of 1938, placed a still larger block of children's time under social controls. In the same decade, the new Social Security Act began to socialize the insurance value of children. The full process took 40 years. As late as 1957, 51 percent of persons over age 65 still reported receiving direct income support from their own children, compared to 42 percent who received some income from Social Security. However, by 1980, a mere 4 percent received help from their children, while over 90 percent drew on Social Security.<7>

In effect, the federal government and the states have already socialized the potential economic gains provided by children. Meanwhile, the direct costs of raising children are left with parents. One consequence is a sharply diminished birthrate. This "demographic contradiction" inherent to the welfare state has long been apparent to observers.<8> The proper compensation is massive tax relief targetted on families with dependent children, where progressivity of taxation is offset by the fact of marriage and the presence of children: indeed, where marriage and children serve as normal taxpayers' most prominent tax shelters. This would mean that single adults and childless married couples would bear a significantly higher share of the tax burden than their "child rich" neighbors. Yet, since these categories of persons are, in effect, "free riders" in a pay-as-you-go Social Security system (where children, not money, are the real investment for the future), they *should* be paying a larger share of the income tax bill.

3) *Favored treatment of the home economy*. Each individual actually lives in two economies. The more visible of these is the market economy, characterized by the production and exchange of goods and services through cash, with a substantial proportion going to the state through taxes. The other economy is the home, or household economy, where goods and services are produced and exchanged on a non-cash, altruistic basis. It is through these latter acts and exchanges--ranging from child care, meal preparation, and home repair to carpentry, gardening, and canning--that the institutional life of a family takes form. As the home economy *grows* relative to the market economy, the family's claims on the individual--relative to other institutions--grow as well. Moreover, because it operates outside the cash nexus, the household economy is difficult to count and tax, normally leaving all of its gains to the family.<9>

Even in the wake of industrialization, these actions and exchanges represent economic activity of considerable value. Working with U.S. data in the mid-1970's, Scott Burns calculated its overall worth to be at least 50 percent of the official Gross National Product.<10> Working with a more sophisticated model and Australian figures from 1992, economist Duncan Ironmonger calculated a "Gross Household Product" almost *equal* to what he calls the "Gross Market Product," roughly $350 billion each.<11>

Experience shows that taxation policy has a direct effect on the degree of household commitment to the two economies. Sociologists Janet and Larry Hunt have shown that the net effect of higher marginal tax rates is to encourage the substitution of home production for market production: with a one-point increase in marginal tax rates, the average woman will work thirty-nine fewer hours annually in the market economy, and devote twenty-nine more hours to home production, as the family defends its living standard (and shelters income from taxation) by turning toward home.<12> On this same questions, Harvey Rosen emphasized that "[m]arried women do in fact seem to react to tax rates in the 'rational' manner of standard economic theory."<13> Surprisingly, this turn to home production by "women in families with higher after-tax cash income contributes more to their families' economic well-being than that of women in lower after-tax income families."<14>

Accordingly, tax policies that encourage home production can be viewed as strengthening the institutional family. Those that discourage home production can be viewed as weakening the family. In a break with conventional wisdom, this measure suggests that a favorable non-revenue efect of high marginal taxation is the encouragement it gives to family production and the home economy.<15>

THE HISTORICAL RECORD

Relative to these measures, how has the Federal tax burden evolved over the last 50 years? In broad terms, by the end of the 1940's, the Federal government had achieved a solidly pro-marriage, pro-child, pro-family income tax structure. However, the next forty-five years showed a steady dismantling of this structure, continuing to the present.

Each of the two major tax reforms of the 1940's introduced a new concept to the taxation of personal income.<16> While both of these had powerful pro-family effects, the primary motivation in each case actually had little to do with social issues.

The Reform Act of 1944 created the uniform per capita exemption. In prior decades, personal exemptions had varied widely depending on one's status. In 1925, for example, a married couple received a $3,500 exemption, a single person $1,500, and each dependent $400. For reasons primarily of simplicity in administration, Congress adopted a uniform $500 per person exemption in 1944 for the wartime income surtax, and extended it to normal taxation in 1946. A secondary purpose, though, appears to have been pro-family in intent. As a Ways and Means Committee Report explained, the 1944 Act was expected to impose a "lesser burden on the taxpayers with a large family and a greater burden on taxpayers with a smaller family."<17>

In 1948, a Republican Congress--over President Harry Truman's veto--forced through a new Tax Reform measure. With the Treasury running a surplus that year of $8.4 billion, the primary goal was to cut taxes, and Congress did so in a family-supportive way. Forty percent of the tax cut was achieved by raising the personal exemption by one fifth, to $600 per person. Another 13 percent of the tax cut came through the introduction of an altogether new treatment for household taxation: income splitting.<18> This radical, yet strongly pro-marriage measure came largely in response to state actions over the prior ten years. As federal taxation had begun to mount in the 1930's and '40's, a number of states had switched their family legal codes toward the "community property" concept in marriage, a legacy of Spanish law. Under court rulings, this allowed the couple to use "income splitting" in filing federal taxes. Under its provisions, married couples would add up their total income, and then "split" that sum down the middle, with each person effectively being taxed on their half alone. Within progressive tax rates, this gave a strong bonus to marriage. Compared to single persons, effective tax brackets for married couples became twice as wide. Conversely, a divorce would eliminate this favored tax treatment, and in most cases would raise net taxation of the broken home.

By 1948, a number of states were joining in this rush to help their citizens. To end the inter-state competition, Congress voted to make "income splitting" the law of the land. In the context of 1948, where cutting taxes was the central goal, no one was worse off than before. Yet married couples --particularly at the middle income levels--enjoyed a dramatic improvement in their status relative to singles.

The 1948 measure also expanded the generous treatment accorded owner-occupied housing: the "imputed rent" of the home was exempted from taxation; the interest on mortgages was also exempted, as were the capital gains from the sale of a house if a new one was purchased within a given time. Veterans Administration (VA) and Federal Housing Administration (FHA) regulations, in conjunction with underwriters' guidelines, delivered most of these new, tax-favored mortgages to young married couples.<19> Econometric analysis showed that about 25 percent of the growth in homeownership in the 1945-75 period was a direct consequence of the tax system's favorable treatment of owner-occupied housing.<20>

Accordingly, by 1948, the United States could claim a powerfully pro-family tax code:

(1) the progressivity of tax tables was sharply reduced in a manner that favored marriage and children;

(2) there was a strong financial incentive for adults to marry and a significant, indirect penalty for divorce;

(3) the costs of child-rearing were fairly recognized; indeed, the per-capita exemption actually provided a kind of special bonus for truly large families;

(4) as the tax code worked in conjunction with other government programs, family housing enjoyed a dramatic boom;

and (5), the "household economy" was encouraged by high marginal tax rates in conjunction with income splitting.

Over the following fifteen years, the nation enjoyed both unprecedented economic expansion and remarkable social health. Marriages were more stable than in prior decades, and the proportion of adults who were married reached an historic high. Following a post-war "spike" in 1946, the divorce rate steadily declined. The "baby boom" also roared into high gear, with marital fertility nearly doubling between 1944 and 1957. Tax policy, it appeared, had been translated into family strength.

Almost from the beginning, though, critics began to assail the 1948 Reforms. "Income splitting" drew the loudest complaints. A legitimate concern came from widows and other non-married persons with dependents. But Congress responded wisely here and extended some of the benefits of "income splitting" to these categories of taxpayers in 1951, under the category "head of household."<21> But other complaints revealed a deep hostility to the very essence of the plan. One influential analyst claimed to see no virtue in a system which gave a benefit to a person just because he or she had acquired a spouse, rather than spending money in other ways.<22> Another argued that "[a]t the top of the income scale, the major rationale of income taxation is to cut down on the economic power of the family unit," a goal subverted by the 1948 reforms.<23> For a time, Congress turned a deaf ear to these arguments.

The one troubling, although largely invisible development in the 1950's was the slow erosion in the value of the personal exemption, both in terms of inflation, as well as an offset against average per-capita income. According to Treasury analyst Eugene Steuerle, this change would become "[b]y almost any measure...the largest single change in the income tax in the postwar era."<24>

Direct dismantling of the pro-family tax code began in the 1960's. John F. Kennedy's 1963 tax cut, for example, did not raise the value of the personal exemption, as it should have done if the principles of 1948 had been followed. Rather, the measure implemented the new minimum standard deduction that paid no attention to the presence of children, focusing instead on relief for taxpayers with the smallest incomes.<25>

Later in that decade, complaints that "singles" were treated unfairly under "income splitting" reached the ear of Wilbur Mills, chairman of the House Ways and Means Committee. In 1969, he expressed interest in extending tax relief to help "bachelors and spinsters as well as widows and widowers," while retaining the "marriage incentive" for those under age 35. The House-approved bill carried this distinction. Yet the Nixon Administration's tax reform proposal eliminated the age restriction altogether, and limited the gains from income splitting to 20 percent of total tax. It was this universalized measure that won adoption in the Tax Reform Act of 1969. Not only did this abandonment of "income splitting" sharply reduce the "marriage incentive"; it also created a "marriage penalty," which affected some two-income couples with particular force. It created a situation where they would, in fact, be better off single, rather than married.

The 1970's were witness to a mounting critique of the favorable tax treatment accorded the "household economy." Some critics saw "income splitting" as giving too much benefit to families with a mother-at-home. As June O'Neill of the Urban Institute put it, "a system of joint filing is likely to discourage the market employment of married women."<26> Other critics said that it was unfair to leave "home production" untaxed, since this encouraged people to produce their own goods and services instead of buying them, which diminished the revenue base.<27> But since it was difficult to measure, and hence tax, home production, policy architects recommended instead that targetted tax cuts be given to households with working wives, which would have the same effect.

Accordingly, in 1972, Congress increased the value and availability of the tax deduction for child care. In 1976, it substituted the Dependent Care Tax Credit, which granted direct tax relief of up to $800 to working parents who put their children in institutional care. Similarly, Congress' attempt to reduce the "marriage penalty" in 1981 tax legislation (by permitting a partial deduction on the second income of a two-earner household) also enjoyed the same theoretical justification: this was an indirect way to tax the extra "implicit income" produced by the additional home labor within the "one-career" household.

At the same time, the housing provisions of the income tax code ceased to have a pro-family effect. FHA and VA eligibility standards were loosened, with the effect being the funneling of substantially more loans to non-family households.<28> Indeed, by the early 1980's, some housing analysts suspected that a truly unusual, even perverse process had emerged. As economists George Sternlieb and James Hughes explained: "The very decline in the size of household, with its nominal generation of increased demand for housing units, may in turn be a consequence of the availability and costs of housing units generally."<29> Put another way, the tax-favored housing system had now developed a vested interest in divorce and family disruption, where housing supply pushed artificial demand, and where federal housing subsidies--including tax benefits--now served as a substitute for the economic gains once provided by marriage.

Meanwhile, mounting inflation accelerated the erosion of the personal exemption. Even it's increase from $600 to $1,000 in 1969 did little to help. Together with the changes cited above, families with children became the big losers in the income tax sweepstakes. As Eugene Steuerle has shown, between 1948 and 1984, single persons and married couples without children showed no real increase in their average net federal tax rate. In contrast, married couples with two children saw their average income tax rate rise by 43 percent (from 6.9 to 9.9 percent), while a couple with four children faced a dramatic 223 percent increase (from 2.6 to 8.4 percent).<30>

On top of this, the pressure of the payroll tax was mounting rapidly. In 1947, the maximum payroll tax was only $30 annually, about 1 percent of mean household income. As late as 1965, the maximum annual tax was still a modest $174. But then came a steady expansion of coverage, benefits, and the mandatory FICA contributions to pay for them. By the early 1980's, this number had reached $2,400 (or $4,800, if one also included the employers' portion). As a regressive levy, the payroll tax fell most heavily on low-and middle-income workers, precisely the categories where potential new parents could be found.

One countervailing development was the creation of the Earned Income Tax Credit [EITC] in 1975, a modest income supplement made available to low-income working families with at least one dependent child at home. It is important to note that the EITC was conceived as a tax rebate to the working poor with children: its maximum benefit level was initially keyed to the combined total payroll tax rate (both employers and employees portions).

This measure aside, though, the 1963-85 period were years of loss for the family, relative to federal taxation. Conscious policy changes, in league with inflation, had these consequences:

(1) Families raising dependent children faced ever heavier federal taxes, both absolutely, and in comparison to single persons and childless couples; and the larger the family, the greater the increased burden;

(2) "income splitting" disappeared as a guiding concept, reducing the incentive to marriage, creating a disincentive to marriage in its place, and largely eliminating the disincentive to divorce;

(3) indirect taxation of the "household economy" appeared for the first time, under the guise of the Dependent Care Tax Credit, followed by the 1981 "correction" to the "marriage penalty";

(4) tax incentives to owner-occupied housing ceased to have a pro-family effect; indeed, there was mounting evidence that these incentives (in conjunction with other policy shifts) now damaged the interests of families, and even encouraged family break-up;

and (5), the mounting scope of Social Security and the financial pressures of the payroll tax eliminated remaining economic bonds between the aged and their grown children.

There can be little doubt that these shifts in the tax treatment of families had something to do with the negative turns in family life that began in the mid-1960's. The number of divorces climbed from 393,000 in 1960 to 1,213,000 in 1981, with the divorce rate rising 140 percent. The rate of first marriage fell 30 percent in the same period. Among women ages 20-24, the decline was 59 percent. The U.S. fertility rate tumbled from 118 (per 1000 women ages 15-44) in 1960 to 65.6 in 1978. The number of legal abortions climbed from 745,000 in 1973 to 1,577,000 in 1981. The total fertility rate, which measures the ability of society to reproduce, slipped into the negative column for the first time in 1973.

Then came the Tax Reform Act of 1986. Partly as a response to its inability to balance the competing demands of married persons and singles, and of one-income and two-income families, Congress turned to a radically different approach. Its features included:

-- the reduction of multiple tax brackets--ranging from 11 to 50 percent on regular income--to only two: 15 percent and 28 percent;

-- an increase in the personal exemption to $2,000 by 1989, and its indexing thereafter to inflation; however, personal exemptions would also now be phased out for higher income households (above $71,900 for joint returns, and $43,150 for singles), creating in effect a 33 percent tax bracket during this phaseout period;

-- a repeal of the "marriage penalty" deduction;

-- modest expansion of the Dependent Care Tax Credit;

-- and retention of most of the tax preferences given to owner-occupied housing.

For the family, what were the effects? There were both gains and losses. On the positive side:

-- The near-doubling of the personal exemption, from $1080 to $2,000, was a significant gain, although the reduction in marginal tax rates (from 50 to 28 percent at the top level), blunted its effects at the middle and upper income levels. Nonetheless, the encouragement to child bearing was real. Whittington, Alms, and Peters predicted in 1987 that this change would result in a direct increase in the U.S. fertility rate of 7.53 births per 1,000 women, ages 15 to 44, by 1990.<31> The real increase turned out to be fairly close to this prediction: 5.5.

-- Indexing the exemption to inflation was another major achievement, putting a halt to the continued erosion in its value.

-- And elimination of the special deduction for two income couples ended this indirect tax on imputed household income.

On the negative side, though:

-- In the contest between participation in the 'market economy' and the 'home economy,' the Tax Reform Act of 1986, by bringing tax rates down, generally shifted incentives toward the marketplace. One analysis predicted a direct 2.6 percent increase in the labor force participation of wives, due to the tax bill.<32>

-- The tax benefit for out-of-home child care, and its indirect tax on the parent-at-home, grew in size and relative significance.

-- The phasing out of the personal exemption abandoned the important principle adopted in 1944 of a uniform per-capita exemption. In practice, this phase-out also became a kind of indirect tax on the children of the relatively well-off.

-- The significance and probable contemporary negative thrust of housing tax preferences remained unchanged.

-- The so-called "marriage penalty" reappeared in a new form.

-- And an increase in the relative value of the standard deduction for "heads of households" (normally one-parent families) actually created a small incentive favoring divorce and an equal division of children.<33>

In all, for families, this Act marked the continued erosion of support. While fertility was encouraged, marriage faced heightened disincentives, as did the operation of the home economy.

THE CURRENT TAX AND FAMILY DEBATE

How would the tax plans of the major Presidential rivals of 1996 affect the family?

Turning first to the tax plan advanced by Bob Dole, and included in the 1996 Republican Platform,<34> we find three measures that might significantly affect family wellbeing.

1) An across-the-board, 15 percent reduction in tax rates (effectively eliminating the tax increases of 1991 and 1993). The principle result here would be an increase in the incentive for engaging in market labor, as opposed to home production. As in 1986, this could be expected to draw from households more secondary (and tertiary) workers into the labor supply, particularly married women with children. Indeed, since the stated purpose of this tax rate cut is to increase overall tax revenues, its very success implicitly depends on the move of parents from home-centered to market-centered activities. In consequence, the family would marginally weaken as an institution.

2) Creation of a new $500-per-child family tax credit, introduced in addition to the personal exemption and phased out at upper income levels. While the "phase out" would again represent poor policy, the general thrust of

this charge would be a strong stimulus to fertility. Using Whittington's model regarding the elastricity of fertility relative to a per-child tax benefit, one might estimate an overall increase in the U.S. fertility rate of between 6 and 12 percent, if the Republican plan was adopted. Relative to the family, then, the 15 percent reduction in tax rates combined with the $500 per child tax credit would encourage both more working mothers and more children, and a probable increase in the demand for day care services.

3) The long-term creation of a "flatter, fairer, and simpler" tax code. This reference in the 1996 Republican platform is a vague echo of the enthusiasm for a "flat tax" injected into the spring primary campaign by candidate Steve Forbes. A pure flat tax, with one fixed rate and no deductions and exemptions, would have wholly negative effects relative to family life. Elimination of the personal exemption would be a significant depressant of fertility, and the elimination of marginal rates altogether would greatly increase the preference given to market labor over home production. Yet few contemporary advocates of a "flat tax" now have this pure version in mind. Most plans contain a fairly large "personal exemption," ranging from $4,000 to $8,000 per person. In the context of scrapping virtually all other exemptions, deductions, and credits, this approach would be strongly pro-natalist in its effects, as children again become the average taxpayer's most valuable tax shelter. Some contemporary plans (such as that advanced by Mr. Forbes) also involve the elimination of the deductions for the interest paid on home mortgages and related real estate costs. Given the probable negative effects of such measures within the contemporary housing market (as described earlier in this paper), and given the substitution of a much larger personal exemption that is very sensitive to family size, this

approach would predictably have an even stronger positive influence on fertility. It would also reduce the unintended subsidy for divorce and separation currently found in U.S. housing policy.

President Bill Clinton and the Democratic Party have advanced their own tax agenda for 1996:<35>

1) In contrast to Republican plans for a tax cut, President Clinton implicitly defends the tax increases of 1991 and 1993, and their trend toward greater progressivity in income tax rates. In doing so (and most probably without intent), he indirectly defends the modest encouragement these tax hikes gave to the home economy, or home production. Indeed, it may be that these tax increases on the market economy contributed to the notable levelling off of the female employment rate since 1990. After a fairly steady increase over the whole 1965 to 1990 period, this measure of relative commitment to market labor by women has ceased to grow, and in some age categories has actually reversed direction over the last five years.

2) "We want to strengthen middle-class families by providing a $500 tax cut for children," with an implied phase-out of this cut [a "credit"?] at some unspecified figure. This measure could be expected to have a positive impact on fertility, similar to that of the Republican proposal. Unlike the latter, though, the Democratic measure would occur in the context of higher marginal tax rates, which would encourage working mothers to reduce their commitment to market labor, and to turn toward home.

3) The Democratic Party has also proposed special tax treatments for higher education, including a deduction of up to $10,000 "for families to help pay for education after high school" and a $1,500 "tax cut" to guarantee the first year of tuition at a typical community college. While the stated

purposes involve "human capital development," these measures might also have effects on both fertility and the home economy. As the Platform notes, "[n]o tax cut will do more to raise American incomes than a tax cut to pay for college." Such costs are currently one of the largest concerns in family financial planning and, I suspect, a significant deterrant to family size (even though the two events are separated in practice by about 18 years). If these proposals were adopted and appeared to reduce the future net real future cost of college for parents, possible effects might include the birth of more children, a lessened investment by family members in market labor, and a related increased commitment to the home economy.

Taken at face value and in overall terms, the Democratic Platform regarding taxation is somewhat more favorable to family living than is the Republican Platform, due primarily to the former's more favorable, indirect treatment of the home economy, relative to the market economy.

If asked what would improve either document, I would without hesitation advocate a return to the taxation principles of 1948, adjusted for changes in the cost of living:

-- a large, uniform, and universal personal exemption ($6,000 per person) in the context of enhanced progressivity of rates;

-- and pure "income splitting" for married couples.

The record strongly suggests that these measures would give an incentive to marriage, discourage divorce, favor the birth of children, and encourage a greater commitment to family autonomy and institutional strength, through home production.

NOTES

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2. See: Robert T. Michael and Gary Becker, "On the New Theory of Consumer Behavior," SWEDISH JOURNAL OF ECONOMICS 75 (1973): 379-96; Michael C. Keeley, "The Economics of Family Formation," ECONOMIC INQUIRY 15 (April 1977): 247; Robert J. Willis, "A New Approach to the Economic Theory of Fertility Behavior," JOURNAL OF POLITICAL ECONOMY 81 (March-April 1973): S14-S69; and Gary S. Becker, A TREASTISE ON THE FAMILY (Cambridge, MA: Harvard University Press, 1981).

3. See: James A. Mirrlees, "Population Policy and the Taxation of Family Size," JOURNAL OF PUBLIC ECONOMICS 1 (1972): 169-198; Marc Nerlove, Assaf Razin, and Efraim Sadka, "Income Distribution Policies with Endogenous

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4. Leslie A. Whittington, "Taxes and the Family: The Impact of the Tax Exemption for Dependents on Marital Fertility," DEMOGRAPHY 29 (May 1992): 215-226.

5. Leslie A. Whittington, James Alm, and H. Elizabeth Peters, "Fertility and the Personal Exemption: Implicit Pronatalist Policy in the United States," THE AMERICAN ECONOMIC REVIEW 80 (June 1990): 545-556.

6. A justification for this definition can be found in: A.C. Carlson, FROM COTTAGE TO WORK STATION: THE FAMILY'S SEARCH FOR SOCIAL HARMONY IN THE INDUSTRIAL AGE (San Francisco: Ignatius, 1993): 4-6.

7. Steven Crystal, AMERICA'S OLD AGE CRISIS (New York: Basic Books, 1982): 16-18, 32, 57.

8. Gunnar Myrdal ably described the problem in POPULATION: A PROBLEM FOR DEMOCRACY (Cambridge, MA: Harvard University Press, 1940): 197-200; a more recent analysis of the anti-natalist effects of state old-age pensions, on a global basis, is: Charles F. Hohm, et al. "A Reappraisal of the Social Security-Fertility Hypothesis: A Bi-directional Approach," THE SOCIAL SCIENCE JOURNAL 23 (Dec. 1986): 149-168.

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10. Scott Burns, THE HOUSEHOLD ECONOMY: ITS SHAPE, ORIGINS, & FUTURE (Boston: Beacon Press, 1977).

11. Duncan Ironmonger, "The Domestic Economy: $340 Billion of G.H.P.," in B. Muehlenberg, ed., THE FAMILY: THERE IS NO OTHER WAY (Melbourne: The Australian Family Association, 1996): 132-146.

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15. See: C. Lowell Harriss, "Important Issues and Serious Problems in Flat-rate Income Taxation," AMERICAN JOURNAL OF ECONOMICS AND SOCIOLOGY 43 (April 1984): 159-162.

16. H. Seltzer, THE PERSONAL EXEMPTION IN THE INCOME TAX (New York: National Bureau of Economic Research, 1968): 38-57.

17. HOUSE WAYS AND MEANS COMMITTEE REPORT NO. 1365, 78th Congress, 2nd Session, p. 5; quoted in Seltzer, p. 42.

18. For a detailed treatment of this concept, see: Harold M. Groves, FEDERAL TAX TREATMENT OF THE FAMILY (Washington, DC: The Brookings Institution, 1963): 56-83.

19. See: Gertrude Sipperly Fish, ed. THE STORY OF HOUSING (New York: Macmillan, 1979): 472-475; and David Laidler, "Income Tax Incentives for Owner-Occupied Housing," in Arnold C. Harberger and Martin J. Bailey, eds, THE TAXATION OF INCOME FROM CAPITAL (Washington, DC: The Brookings Institution, 1969): 50-64.

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21. Groves, pp. 58-59.

22. Ibid., p. 59.

23. Joseph A. Pechman, FEDERAL TAX POLICY (Washington, DC: The Brookings Institution, 1966): 83.

24. Eugene Steuerle, "The Tax Treatment of Households of Different Size," in Rudolph G. Penner, ed., TAXING THE FAMILY (Washington, DC: American Enterprise Institute, 1983): 74.

25. REPORT OF THE COMMITTEE ON WAYS AND MEANS TO ACCOMPANY H.R. 8363 (Washington, DC: U.S. Government Printing Office, 1963): 24.

26. June O'Neill, "Family Issues in Taxation," in Penner, p. 13.

27. On this point, see: Ake Blomquist and Michael McKee, "Eliminating the 'marriage exemption' in the Canadian income tax: The Erola proposal," CANADIAN JOURNAL OF ECONOMICS 19 (May 1986): 309-317.

28. See Carlson, pp. 78-84.

29. George Sternlieb and James W. Hughes, AMERICA'S HOUSING: PROSPECTS AND PROBLEMS (New Brunswick, NJ: Center for Urban Policy Research, Rutgers University, 1980): 58-66.

30. Steuerle, p. 75.

31. Whittington, Alms, and Peters, p. 553.

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33. Noted in Thomas J. Espenshade and Joseph J. Minarik, "Demographic Implications of the 1986 U.S. Tax Reform," POPULATION AND DEVELOPMENT REVIEW 13 (March 1987): 119.

34. RESTORING THE AMERICAN DREAM: THE REPUBLICAN PLATFORM, 1996 ([Washington, DC]: The Republican National Committee, [1966]): 8-9.

35. TODAY'S DEMOCRATIC PARTY: MEETING AMERICA'S CHALLENGES, PROTECTING AMERICA'S VALUES: THE 1996 DEMOCRATIC NATIONAL PLATFORM (xeroxed test): 4, 7.

Senator COATS. I think the operative question here clearly is that there is a consensus that early childhood is a critical time in a child's development. Research has buttressed the view that I think many of us have learned through anecdotes and experience, but we now have some sound scientific basis to reinforce those conclusions.

Second, I think there is a consensus across the board that nothing, really, can replace the kind of emotional and natural bonding that is necessary between mother and child.

We recognize, third, that this is not always possible, and therefore, the question is, how should we be formulating our policies? Clearly, the problem that we have, I think, is that there are not enough incentives to address the economic problems that many families today face to allow the mother the option of staying home. I think that if you talk to mothers who are working, the vast majority of them—and I think studies show this—would prefer to spend time with their children in those early years, rather than work. They are torn between getting the house in the suburbs, some of them, and the upgraded car and other provisions for the family—some of which are legitimate, some maybe are not legitimate. Clearly, setting aside money to save for children to go on to further their education is a legitimate goal.

And so the question is, we have situations where there is clearly inadequacy, in terms of our Tax Code, in terms of our labor laws, in terms of our regulations, relative to supporting the concept that mothers, if possible, ought to have the choice of being with their children, particularly in those earlier years.

By the same token, we recognize that there are individuals—particularly, economically disadvantaged individuals, and families and mothers—who are going to need assistance in this process. They are going to need child care, and the question then comes, what kind of child care?

We have to recognize, I think, third, that overlaying all of this, are limitations from a budget standpoint, in terms of what we can do—what businesses can do, what State Governments can do, what the Federal Government can do. We do not have the resources to address all of these needs. And so it is a question for us as policymakers to try to sort all of this out in terms of where we should put emphasis—where is there a shortfall in terms of Federal resources and Federal policies to support those mothers who want to stay at home—you talked about dependents exemption and a number of other ways to do that—but also recognizing the fact that, clearly, that is not always going to be feasible, particularly in this limiting of Government resources, welfare-to-work and so forth, that there are going to be needs for adequate and quality child care.

So it is not one or the other, either/or. I think it is what combination of policies can best advance us toward the goal of providing the kind of care, nurturing, love, stimulation, attachment, emotional development and intellectual development that will give children the best opportunities to develop to the fullness of their human potential.

Dr. Zigler, you put your emphasis, while you recognized the importance of the mother and child bond, more on Federal policies, addressing those that did not have that opportunity. But do you disagree with what Carlie Dixon said, in terms of our also addressing policies that look at the income tax laws, the labor laws and so forth, that would give mothers more choices?

Mr. ZIGLER. Not at all. I think the operative word is "choice," and your statement is an excellent one, Senator Coats.

There are two groups. There are homemakers, and I am all for them, and there are women who, on their own volition, have made the choice to work out of the home. We have to worry about both of these groups.

Let me just give you one fact. If you remember, at a hearing 2 or 3 years ago, you were rather surprised when you brought up increasing the family dependency deduction, and I welcomed it immediately and still welcome it; so I certainly agree. But the reality is that 25 percent of all children in the United States today are being raised by a single mother, primarily—a few fathers, but mostly mothers—25 percent. Among our black children, that number is over 60 percent. Those mothers have only two alternatives—to go to work or to go on welfare. So, that is that other population.

A good home is absolutely wonderful. I was involved with the NICHD study from its inception, and what we said—actually, it was a meeting at the National Academy of Sciences that I chaired—children need certain environmental nutrients. If they get those environmental nutrients at home in the way that has been described, they do terrifically well. But there is no guarantee.

We have heard wonderful mothers today. Let me point out to you, however, that last year there were 3 million—3 million—reported cases of child abuse in America, with 90-some percent of those being by parents.

So there are good homes, and there are bad homes. There is good child care, there is bad child care. What we should do is make it possible for children to have good environments whether they are raised at home or whether they are raised out-of-home, in child care, because that is simply where we are. There are 5 million children today, as we meet, under 3 who are in out-of-home care.

And as I pointed out to you, we have done study after study after study that has demonstrated that the care that many of these children are receiving is compromising their growth and development. I consider that a national tragedy.

Your tough case, in a time of great budget restriction, is to figure out how to be helpful to parents who have decided to take one course, and that is to remain at home, and another large group of parents who have taken another course, and I do not envy you your task, but if anybody is up to it, you two gentlemen might be.

Senator COATS. I appreciate the compliment. I do not know if that is a challenge we can surmount within the political process, but we are trying.

Ms. DIXON. I would like to make the suggestion that you take off on—I submitted a speech by Allan Carlson from the Rockford Institute on the Federal tax system and the family, and there is some very interesting material in there, indicating that the population does respond to things that are in the Tax Code. They can even predict fertility rates based on the level of the dependency exemption, which was quite interesting to me.

But at any rate, it seems to me that we are going to have to do both—we are going to have to do some subsidizing of day care; we are going to have to do some changes that allow parents who are not in an at-risk community to make better choices for themselves—or at least have a choice, let us put it that way—give people a choice.

It seems to me you could do some sort of an economic analysis. How much can you change the Tax Code, or how much do you need to change the Tax Code to optimize choices, and how much do you need to put into day care to really address the at-risk community? And it seems to me that there should be some sort of way to get some of our economists to look at it and look at where it balances out economically. You have finite resources. Where does it tip the balance? Where do you get the most choice for the nonfat-risk community and the most help for the at-risk community?

Senator COATS. Senator Dodd?

Senator DODD. Just quickly—Dr. Zigler mentioned paid family and medical leave. Would you support that?

Ms. FISHER. I would support that as one option, but my feeling is that the comp time bill, S. 4 allows——

Senator DODD. I understand, and I will get to that in a minute, but paid leave. How about you, would you support paid family and medical leave?

Ms. DIXON. I would do it if it were targeted to those families who truly need it, yes.

Senator DODD. All right. Let me ask you about welfare reform. How about giving welfare mothers the choice of taking child care dollars or taking the dollars to stay at home so they would not have to go to work; how would you support that?

Ms. DIXON. I absolutely agree with that. I am a big proponent of welfare reform except for that one provision. I have been very concerned about forcing mothers to leave their children.

Senator DODD. How about you?

Ms. FISHER. I agree with Carlie, but I would also add on to that that I would not simply allow welfare mothers to stay at home. If, statistically, those children are more at-risk, I would want to see programs in place.

Senator DODD. I understand that. I am talking about normal circumstances.

It is interesting. I am not sure you would get about four or five votes for that proposal here, but I appreciate your support of it. I hope as well that we might focus on keeping families together. As you mentioned, Doctor, there is the staggering number of single parents. I agree with you, by the way, and as you know, Senator Hatch and I tried for years to put standards into the child care block grants.

I found it intriguing that we would cut off funds to States if they did not raise the drinking age, and I supported that, I think that made a lot of sense. But there is no threat to States at all if they do not provide basic quality for children. You go into most State statutes and look in their standards for places where you can leave your pet while you go off on a vacation—there are standards that have to be met. There are standards where you go and get your poodles clipped; there are standards you have got to meet in those places. But the idea that we cannot have standards that would require that there be not only safety, but some basic concepts of what is needed in those environments so that children are getting at least the best possible care, is stunning to me. But any suggestion that the Federal Government might set those standards and jeopardize funds to States that do not comply is not political acceptable. Yet we do it in all sorts of areas, all across the Federal budget. States are constantly put at risk of losing Federal dollars if they do not do certain things in almost every other area but this one.

It is amazing to me that we have not been able to get the kind of support we need on this issue. I am not talking about voluminous standards, but basic ones, and if States want to do more, then so be it. I have always been surprised at that.

There is also another issue of the fathers and what role they play, we spend an awful lot of time—Senator Wellstone mentioned this earlier—taking a look at he whole area of custody, and child support, visitation. We have terrible time with child support. The untold story is that there are a lot of fathers—and I am not suggesting that they are right in this, nor am I excusing it—but the court systems, the way they work, in a way, who are absentee parents, and there is a tremendous antagonism that exists that is almost fostered and promoted, and that does incredible damage, in my view, to a lot of kids in the earlier stages where the fathers are not around, and the system almost goes out of its way to keep them apart. That is something you might just want to comment on, if you would, quickly.

And last, Senator Bond and I tried a few years ago to promote a program for Parents as Teachers, and we would like to look at this again. The other area is substance abuse, as Senator Gregg mentioned, I authored the Children of Substance Abusers Act a few years ago. It was authorized, but we have never got nickel for it. There was never any money for it. I will reintroduce it, particularly in light in some of these increased statistics of alcoholism and drug abuse. And as you pointed out, Dr. DeCasper, very wisely in my view, the parent who abuses alcohol during pregnancy, particularly in light of a lot of the information we have today, is not likely a parent who is going to stop abusing once the child is born. And while we know of the chemical implications of alcohol and drugs on a fetus, the implications of growing up in those earliest days in a home where there is abuse of substances that create the kind of havoc cannot be as easily correctable.

It is encouraging to hear physicians and researchers and those of you who work in this area talk about the ability of a child physically to overcome the physical detriments of a mother who exposes herself to dangerous substances during pregnancy. But I gather what you have also said here is that as that child gets older, very quickly, the ability to recover diminishes significantly, and particularly the emotional damage, as you have pointed out, Dr. Chugani, with the Rumanian children.

So I would hope we might get some more support for that, and again I just wanted a comment. Maybe you do not want to comment on any of this, but if you have any reactions to what I have said here, I would appreciate it.

Ms. Fisher. I would like to comment on that middle question about standards for care in child care.

We heard a story last week at the Harvard Leadership Conference. A group of Hispanic welfare women created a child care group—you may be aware of this—and applied for child care tax credit vouchers through the welfare reform bill. And they were denied because they were blocked by the National Association for the Education of Young Children, because they were not certified, full-time professionals. I would not like to see standards be developed that bias toward institutional or nonrelative or noncommunity care.

Senator Dodd. I do not think that I have said that.

Ms. Fisher. No, you have not said that, but that is just what I am commenting on——

Senator Dodd. The danger here is not going that route. The danger is, as Dr. Zigler pointed out, that you cannot get States to get any kind of standards.

I would prefer that problem be that the standards were too tough. I would love to wrestle with that one for awhile. But I have gone on for 10 years now on this, and after 10 years and all the information that we have about the problems that are created—and the stories are legion, and every day you pick them up. I lost 5 kids in Connecticut in the last year—they died because of child care settings. They died. And I would love my problem to be that they were too strict, and the parents were coming to me. I do not have that problem yet. But we are losing kids every day in this country, we know a great deal, and we are doing damned little about it.

Senator Coats. Well, I think it is fair to say also, Senator Dodd, that we have lost kids in State-certified, State-inspected, so-called quality day care settings. There have been some trials—very prominently, public trials—of child abuse in State-certified centers also.

It is a complex problem. There are States that have very strict standards, and there are a lot of mothers and churches and relatives and welfare mothers and other groups who are not able to provide care or at least get compensation for providing care because they do not meet those standards, and yet some of the abuse has come out of State-regulated child care centers, so there is some balance on the other side of that.

In conclusion, if I could, let me just ask everyone, is it a conclusion—I would like a yes or no—of the panelists here that given our limited resources, we cannot do everything everybody would like to do, whether it is on the tax side or whether it is on the child care side—would it be wise for us to review all of our current programs and attempt to see how we can direct support, whether, again, it is through the Tax Code, for mothers to stay at home, or whether it is labor regulations or whether it is child care—to direct it more toward those early years and more toward the at-risk families? In other words, there would be caps on eligibility, income eligibility, and also move it toward the higher risk populations. Does anybody disagree with that?

Mr. Zigler. One caveat, Senator. On the child care side of things, we have a study that indicates that the best child care in America is received by the rich, the next best care by the poor because of the subsidies, and the worst care by lower middle-class and working-class families.

When you take a look, I think, yes, you should do what you are saying—how can we beef up programs and better environments for children zero to 3—but you are going to find that the problem is much more than just high-risk families. It goes right up through the working class and into the lower middle-class, so you might have to take a little broader look. But the thrust of your effort is certainly exactly the right one.

Senator COATS. Does anybody else want to disagree there?

[No response.]

Senator COATS. This has been a particularly valuable hearing. I appreciate the contributions of the Members of the Senate and particularly of our witnesses. There are great challenges ahead, but also great opportunities ahead, and your contributions to our understanding and knowledge of these issues is very, very important to us, and I want to thank our panelists for that. We look forward to working with you in the years ahead as we attempt to provide better answers to some of the problems that we face.

Thank you all very much, and this hearing is concluded.

[Whereupon, at 12:20 p.m., the subcommittee was adjourned.]

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